The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 82, NO. 20 CHICAGO, ILLINOIS, MAY 17, 1924

TULAREMIA

WITH REPORT OF FATAL CASE SIMULATING CHOLANGEITIS, WITH POSTMORTEM REPORT

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Bacterium tularense was discovered and named by McCoy and Chapin [1] in 1912, after having been isolated from ground squirrels in Tulare County, Calif., during an epidemic among these animals. Later, Wherry and Lamb [2] isolated the germ from cottontail rabbits, during an epidemic in southern Indiana, and finally Francis, in 1920, discovered that jack rabbits of the states about the Great Salt Lake were infected, and that the human disease known as deer-fly fever was transmitted to man by the bite of a blood-sucking fly, infected by previously biting the diseased jack rabbits. Finally, after extensive study, Francis,[3] in 1922, described the disease and called it "Tularemia, a new disease of man." To him belongs the credit of describing a disease affecting mankind, caused by a germ that had been previously described as causing fatal epidemics in animals.

When I first read the paper of Dr. Francis, and later heard him discuss the subject in person, it did not occur to me that this new disease could have any interest to me as a gastro-enterologist. However, consideration of the symptomatology in the case about to be reported will demonstrate that the subject can be of importance to nearly every practicing physician, regardless of his specialty or the part of the country in which he is practicing.

The case to be reported will be presented in the order in which facts were unfolded, as some of the history was not even obtained until after death.

REPORT OF CASE

History.—Mrs. C. S., a widow, aged 67, of Mount Rainier, Md., whose past history was unimportant, except that until ten years previously she used to have spells of "acute indigestion" with gas and pain, for the past ten years had been free from trouble and in excellent health. Dec. 13, 1923, while feeling perfectly well, she dropped a fireless cooker disk in the stove. She worked hard to get it out. Immediately thereafter she felt hot all over and had a full feeling in the head. Dr. Harry Nally saw her several hours later, at which time the temperature was 103, the pulse was 120, and the patient was deeply jaundiced. I saw her, December 22. Dr. Nally considered the case one of biliary infection, and called in consultation Dr. Noble P. Barnes, who confirmed the diagnosis. Both of them discounted the idea of the fireless cooker incident as having anything to do with the illness, although the patient was firmly convinced that this was the causative factor. At the end of the third day the temperature fell to normal for twelve hours, and then rose again and from that time had varied from 102 to 104 in the evening, with a morning remission of a degree or so. The jaundice had gradually faded to a large extent. For a couple of days at the onset there was considerable nausea and vomiting. There had never been any pain, but the patient had become more and more prostrated and apathetic.

Physical Examination.—On the tenth day the patient, who was well preserved and rather stout, was lying quietly, prostrated, conscious, but very toxic and apathetic. The temperature was 102.6; the pulse, 120, regular, and of good quality. The skin was still slightly jaundiced, and the sclera considerably tinged. Examination was otherwise essentially negative, except for slight resistance of the upper abdomen on both sides. Firm pressure over the gallbladder caused the slightest tenderness. In spite of the absence of pain, it was thought that the history of probable gallbladder attacks until ten years previously, together with the jaundice, fever and slight upper abdominal resistance, made a diagnosis of acute choledochitis and cholangeitis beyond question. Operation was urged, with the opinion expressed that, because of her condition, the outcome would perhaps be bad but that the only hope lay in putting in drainage. The patient was sent to Garfield Memorial Hospital at 2 p. m. that day, and a leukocyte count immediately made, which was 12,000. Because of her having had jaundice, it was decided to give her some preliminary treatment. She was given a rectal drip continuously of 10 per cent. glucose solution, and calcium chlorid intravenously. The urine contained a very faint trace of albumin and a few granular casts. The specific gravity was 1.024. A second leukocyte count, made the evening of admission, was 15,400, and the next morning it had risen to 19,200. It was then decided to operate at once. When the patient was examined for the second time, a little before operation, it was noticed that there was a place on the index finger on the right hand that looked somewhat like a blood blister, with a mahogany to blackish center. There was a bit of fluctuation, but no sign of active inflammation. On being questioned about this place, the patient stated that a few days before being taken ill she had gotten a splinter in the finger, but that it had never given her any trouble, and that the physician had removed the splinter. There had never been any lymphangitis. The matter was then dismissed.

Operation.—At 12:30, December 24, the twelfth day of her illness. The gallbladder was exposed through a high right rectus incision, and to our surprise was perfectly blue, not thickened or in any way giving evidence of disease. There were no adhesions, no enlargement of glands along the ducts, and no dilatation of the common duct. The pancreas and all other abdominal organs were rapidly explored and felt to be normal. The abdomen was closed. The pulse was 150 when the anesthetic was started, and was no higher at completion of the operation.

It was then thought that, at least, while she was under the anesthetic, the finger might be opened and the serum which was believed to be in it removed. On rubbing the finger with an iodin sponge, however, we were amazed to discover that a piece of necrotic tissue rubbed off, leaving a hole nearly as large as a dime, of a dry, somewhat necrotic

1. McCoy and Chapin: Pub. Health Bull. **53**, January, 1912.
2. Wherry, W. B., and Lamb, B. H.: J. Infect. Dis. **15**: 331-340, 1914.
3. Francis, Edward: Tularemia, J. A. M. A. **78**: 1015-1018 (April 8) 1922.

appearance, but not showing the appearance of any ordinary inflammation.

The family was told that the diagnosis was wrong and that there was no suggestion as to the cause of the illness, but nearly at once the vague suspicion of tularemia entered my mind, when I remembered that Dr. Francis had emphasized the fact that tularemia is characterized by a fever that cannot be easily diagnosed and by a sore on the finger. That evening as soon as she had recovered from the anesthetic, the patient was asked whether she had had rabbits on the table recently. She said that she had not for months. The matter of tularemia was then dismissed for the present, and we evolved the theory that perhaps streptococci had been carried almost directly into the blood stream from the splinter in the finger

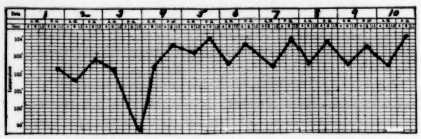

Fig. 1.—Approximate temperature chart, made from memory, for first ten days of illness.

and that there had not been much local inflammation but that there might be a septicemia.

Two blood cultures were done, with negative results.

There was no effect on the patient's condition one way or the other from the operation. There was no change in the temperature, which continued around 104, or in the pulse, which averaged about 140. There was no postoperative gas, vomiting or pain.

She was seen by Dr. Barnes in consultation on the day following operation, and by Dr. Philip Roy on the fourth day after operation. In the meantime, Widal, malaria and Wassermann tests were all done, with negative results. Chemical examination of the blood was negative. To both consultants the question of tularemia was mentioned, but no history of rabbits was forthcoming.

Finally, on the sixteenth day of the illness, Dr. Nally informed me that he had discovered that until eight months before, the patient had kept rabbits to attempt to breed them, but that they had sickened and died, so that she disposed of the rest of them.

I then thought that while the theory was rather wild, perhaps the patient had stuck her finger with the splinter from the old rabbit coop, and that *Bacterium tularense* might have been on the splinter from the time that the rabbits were kept.

Dr. Francis was consulted as to the possibility, and he asked for the blood serum for an agglutination test. This was taken to Dr. Francis, December 30, but before the report could be obtained, the patient died, that same night. Death seemed to occur from increasing toxemia and gradually failing circulation. It was the seventh day after operation and the eighteenth day of illness.

Necropsy.—This was performed several hours after death by Dr. Maurice Sellinger, who found the operative wound partially healed, with no evidence of infection. There were no other external marks of any importance. Both pleural cavities contained about 100 c.c. of cloudy, yellowish fluid. The surface of the lower portions of both lungs was covered with a moderate amount of greenish yellow lymph. The upper lobe of the left lung, with the exception of a moderate amount of edema and some congestion, was apparently normal. The lower lobe was intensely hyperemic and filled with blood, and had in addition, scattered throughout its substance, a number of hard, irregular but discrete, nodules of varying size. On section, these nodules were fibrinous and white, and did not seem to be surrounded by an inflammatory area. The largest one was about the size of a walnut, and the smallest one about the size of a shot. The right lung presented essentially the same picture as the left, but there were more of the nodules present in the upper lobe. In the upper lobe there were a number of peribronchial lymph glands present which showed a moderate degree of anthracosis. The pericardium was apparently normal, and contained the usual amount of characteristic fluid. The heart was small but flabby, and the muscles completely lacked tone. The muscles were somewhat fibrinous and glistening, and there was a moderate amount of fat present. The endocardium, as well as the valves, presented no unusual characteristics. The aorta was apparently normal.

The peritoneum was moderately injected at the site of the incision, and it was not united at this point. The stomach, including the pylorus, and the remaining portion of the gastrointestinal tract, including the appendix, with the exception of an unusual distention of the cecum and the transverse colon, were apparently normal. The liver was soft and bile stained in places, and showed a moderate degree of hyaline degeneration. The gallbladder was apparently normal. The spleen was somewhat larger than usual, and was unusually soft. The pulp was a dark chocolate brown, and almost semifluid in consistency. Scattered over its surface, as well as through its substance, were many small, circumscribed, well defined, hard, yellowish white nodules. The spleen was much congested, and the capsule was somewhat thickened. The pancreas was apparently normal. The kidneys were small, and the capsules stripped readily, and grossly were apparently normal, with the exception of an intense injection.

Tissue Examination (by Dr. Sellinger): A section of the spleen showed marked degeneration of the spleen pulp, with areas of necrosis and definite increase in the fibrous tissue trabeculae. The blood vessels were rather markedly thickened, and some of the degenerated areas were filled with extravasated blood. There was also a marked lymphocytic infiltration, and much pigment was present. No giant cells were found. Sections stained for the tubercle bacillus failed to reveal the organism.

Sections of the lung showed many areas of necrotic degeneration, which are apparently caseous, containing much granular débris and surrounded by a thin and irregular zone of small lymphocytes. No giant cells were present. There was also a very definite thickening of the blood vessels. Some of the necrotic areas were partially enveloped in a capsule of connective tissue. Sections stained for the tubercle bacillus failed to reveal any organisms.

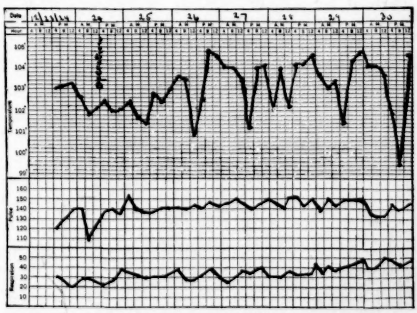

Fig. 2.—Hospital chart of last eight days of illness.

Author's Necropsy Synopsis: The only marked abnormalities were a number of nodules in the lungs, averaging in size of hickory nuts, which had the appearance of metastatic carcinomas. They were rather firm, were grayish, and were slightly caseous but did not resemble tuberculous lesions. The spleen was slightly enlarged. It was extremely soft and actually mushy. Under the capsule were innumerable small yellowish white spots, and on section the whole spleen was filled with these bodies, which were like little millet seeds and which could be rubbed off. Their appearance was so nearly like that of the livers of the rabbits that had died of tularemia at the Hygienic Laboratory that a part of the specimen was

taken to Dr. Francis. He stated that the appearance was typically that of tularemia, and that the serum had given a positive agglutination test but that proof positive would be forthcoming if the diseased spleen, rubbed on the skin of guinea-pigs, caused death from the disease. Several guinea-pigs and a couple of rabbits were inoculated, and in four days they were dead. Not only were the necropsies characteristically positive for tularemia, but the organisms were recovered from the infected animals, thus fulfilling all of Koch's postulates.

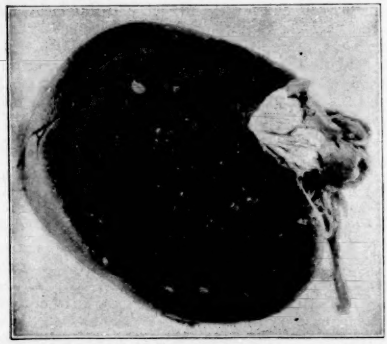

Fig. 3.—Rabbit's liver, showing typical appearance of small necrotic foci of tularemia. (Photograph by Major James F. Coupal, M. C., U. S. Army, by courtesy of Dr. Edward Francis, Surgeon, U. S. P. H. S.)

This is the first necropsy case in man to be put on record. Also, to the best of my knowledge, it is the only case exhibiting jaundice at the onset.

Subsequently, Dr. Francis visited the home of the patient and elicited an entirely different history of the mode of infection, thus spoiling one of the most bizarre features of the case. The frequent impossibility of being able to obtain a correct history is well illustrated. This subsequent history is as follows:

Saturday noon, December 8, Mr. S. (son) bought two rabbits at the market from an old darkey. He took the rabbits home, and they were fried for dinner that evening. As purchased, the rabbits had been slit open and the intestines had been removed, but the livers and kidneys were remaining. Mr. S. merely skinned the rabbits and then turned them over to his mother, who dressed, dismembered and fried them. This was the only occasion on which rabbits had been eaten by the family. They thought, when previously questioned, that domestic rabbits were referred to, and this incident slipped their mind.

Thursday, December 13, on returning home from his work, Mr. S. found his mother with a wet towel about her head, and her fever was about 102.

Mr. S. stated that on Monday, December 10, his mother got a splinter in the index finger of the right hand while manipulating some boxes in the basement of the house. These were store boxes. No especial attention was paid to the splinter, which was removed about Friday, December 14. The rabbits that the patient used to raise were black Siberian hares, and their disease was something entirely different. Therefore, instead of the patient's contracting the disease in some unusual fashion, it is a plain case of infection from dressing market rabbits.

INCIDENCE

The first description of human cases of *Bacterium tularense* infection is that of Dr. Pearse[4] of Brigham City, Utah. Dr. Pearse's six patients were all bitten by a horse-fly, and he did not know what the condition was, other than that it was some infection. His clinical observations were, however, accurate and descriptive.

The first laboratory case was probably that of Dr. Chapin, one of the discoverers of the organism, in 1912, as he had been ill and his blood later gave a positive serologic test.

The first cases proved by bacteriologic examination were eye infections followed by general infection, seen by Drs. Vail[5] and Sattler,[6] and studied culturally by Drs. Wherry and Lamb.

Human cases, reported to date, other than these are:

Seven cases in Utah, studied by Dr. Francis in 1919 and 1920, one of which was fatal. All the patients were bitten by a fly. Francis[3] states that probably two dozen cases occurred in the same territory in each of the years 1917, 1918, 1919 and 1920.

Six cases in laboratory workers in the disease at Washington, and three at the Lister Institute, London.[3]

One case at Washington, D. C., a patient of Dr. J. Lawn Thompson.[7]

One at Charlotte, N. C., a patient of Dr. Lucius Gage.[7]

Since this paper has been in course of preparation, Dr. William J. G. Thomas has had a case in Washington, and Dr. F. H. Mistretta has had one which was almost certainly tularemia, although laboratory proof was not made. Dr. Francis, in a personal communication, says that he has learned that there are at least two physicians in the infected area about Great Salt Lake who have series of 100 cases each.

The only cities in which the disease is known to have occurred are Cincinnati, Charlotte and Washington. There can be little doubt that, not only have cases been contracted by bites in the infected territory and not been recognized, but also in many cities with markets importing rabbits there have been many patients contracting the disease in the second way, i. e., by cleaning infected rabbits, and that these people have either recovered or died under a wrong diagnosis, probably septicemia or typhoid fever. Washington has no monopoly on the importation of diseased rabbits, and if there have now been four recognized cases in this city, there is every likelihood that there must be just as large a proportion in most of the other cities, but that they have not been diagnosed.

Fig. 4.—Section of rabbit's spleen, showing characteristic necrotic foci. (Photograph by Major Coupal, M. C., U. S. Army, by courtesy of Dr. Francis, Surgeon, U. S. P. H. S.)

ETIOLOGY

There are apparently at least three modes of infection:

1. In the localities where the disease is endemic, it may probably be transmitted by the bite of any blood-sucking insect, most often, however, by a variety of horse-fly. The portal of entry can usually be found.

4. Pearse, R. A.: Northwest Med. **3**: 81 (March) 1911.

5. Vail, D. T.: Ophth. Rec. **23**: 487, 1914.
6. Sattler, Robert: Arch. Ophth. **44**: 265, 1915.
7. Francis, Edward: Pub. Health Rep. **38**: 1391 (June 22) 1923.

2. The disease is contracted by those handling, as by cleaning, infected rabbits, and thus can affect either the market man, the cook or the housewife. Here, also, the primary lesion is manifest and will be found on the hand.

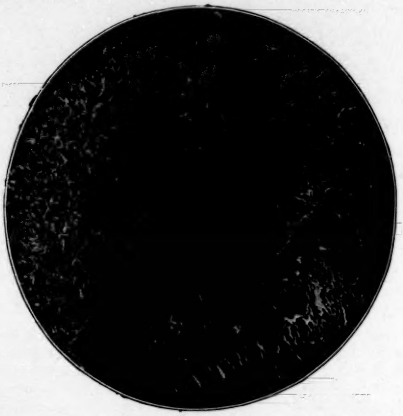

Fig. 5.—Areas of necrosis in section of liver in the case reported, as seen under low power.

3. Those working with the organism in the laboratory stand almost a sure chance of infection, as shown by the examples at the Hygienic Laboratory and the Lister Institute. The exact mode of contagion in these instances is not known, as there has been no primary sore in any of these cases. Suffice it to say that the organism is terribly infectious and dangerous.

SYMPTOMATOLOGY AND DIAGNOSIS

The portal of entry is manifested by a local lesion in all cases except the laboratory cases. At first there may be nothing characteristic, but after several days the bite of the insect, or the sore on the finger, assumes a definite appearance. The center becomes black, or a very dark mahogany, and sloughs out, leaving a punched out defect. The dark center, followed by the punched out slough, and not accompanied by very evident signs of inflammation about the ulcer, is very characteristic. It is a more or less caseous necrosis.

There is usually enlargement of the glands draining the area, sometimes of great size, and frequently suppurating. Indeed, the primary lesion may not have been noticed until either the glands or the general symptoms appear.

The incubation period averages about four days. There may be one or more chills and then a sudden rise in temperature, which then runs a course of from two to four weeks, with a morning remission of a degree or two. In severe cases the highest point may be around 104 or 105 degrees, but it is said that mild infections may run a very slight fever, or be afebrile, and run a much shorter course. The chart resembles closely that of typhoid fever. On all the temperature charts that I have seen there is noted an occurrence which seems to be very characteristic. This consists in a drop of the temperature to normal, for about twelve hours, at the end of the third or the beginning of the fourth day, which is followed by a rise to the maximum again. The laboratory cases show this as well as the present case.

The principal subjective symptoms are profound prostration during the active part of the disease, and weakness through the long convalescence, which may, and usually does, extend over two or three months. There may not be any pain, other than that from the affected glands. Certainly the toxins have not the effect, as have those of influenza and streptococcus infections, of producing severe muscle and nerve pains. The present patient had not even much of a headache, and yet it was evident from the beginning that the degree of toxemia was extreme.

Apparently there are two types of the disease: (1) cases in which the glands are the most troublesome feature, and (2) cases in which the general toxemia dominates the picture.

LABORATORY TESTS

The leukocyte count, in the cases in which it has been made, averages from 12,000 to 14,000. In the present case a height of 19,000 was reached.

Fortunately, there is a specific, serologic agglutination test and a complement fixation. It is not known how soon it develops, as the shortest interval after the onset, before the blood has been examined, is thirteen days. In this case it was positive on the fifteenth day when first examined.

Blood cultures are negative. So, also, in most instances injection of guinea-pigs with the patient's blood has given negative results. But in two cases Francis has isolated the organism from the blood in this way, and he states that both were unusually severe infections, one resulting fatally. It would seem not unlikely that organisms are constantly in the blood for

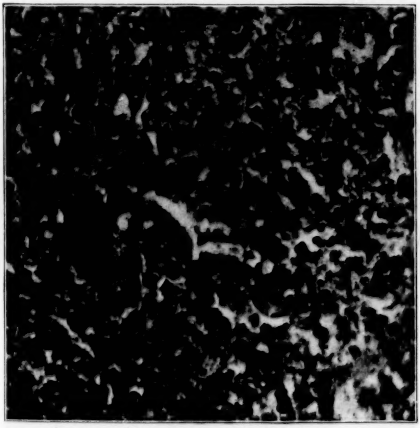

Fig. 6.—Liver focus in case reported; high power.

the first few days, but that in all except the most severe infections, the spleen gradually filters them out.

The diagnosis of tularemia should not present difficulty if the condition is kept in mind. Any case presenting a continuous fever, especially with a remission to normal on the third or fourth day, which cannot be

proved to be due to any of the other known infections, should call tularemia to mind. The second step is to inquire as to a rabbit history and look for an initial lesion, which is characteristic. Thirdly, serum should be taken for the agglutination test, even though the rabbit history is not forthcoming, as correct histories are notoriously hard to obtain.

PROGNOSIS

The disease is a severe one and entails much economic loss. While a few mild cases occur, the patient is usually "knocked out" for several months. It can result fatally. The exact mortality is not known, but, while it is not usually a fatal disease, I feel that there are probably many more deaths than is usually supposed, as patients with the more severe types may die with a diagnosis of typhoid fever, septicemia or something else. No disease with the certainty of severe infection, with the extreme toxic prostration and with such a long duration, could help but have a decided

Fig. 7.—Section of spleen in case reported; low power.

mortality, if not in the otherwise healthy, certainly in those who, by some preexisting defect, are not fitted to go through such a siege.

TREATMENT

From a prophylactic standpoint, the public should be educated as to the possible infection of rabbits with this disease. It should be emphasized, however, that no infection has ever been known to occur in tame rabbits.

The treatment of the developed case is purely symptomatic.

CONCLUSIONS

While there are few reported cases of tularemia, there must be a large number not diagnosed.

There is a considerable likelihood of a marked spread of the disease. Tularemia should be excluded in any continuous fever due to unknown cause. Also, its possibility should be thought of in certain cases of chronically enlarged glands.

It is possible to make a positive diagnosis by serologic examination.

The Rochambeau.

FATAL HEMORRHAGE FOLLOWING TRACHEOTOMY FOR LARYNGEAL DIPHTHERIA *

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Fatal hemorrhage occurring days or even weeks after successful tracheotomy for laryngeal diphtheria is a rare complication and not generally known. Isolated examples of such an unforeseen occurrence are recorded in the literature. It is quite conceivable that not all such cases have been reported, owing to a reluctance to publish avoidable mistakes, although great benefit may be derived by others from such publications. On account of the importance of tracheotomy, as it is an emergency operation which every practitioner may be called on to perform, two cases are herewith reported illustrating the etiology of fatal hemorrhage after tracheotomy.

A critical survey of the subject and the analysis of a personal experience in the surgical clinic in Leipzig was included in a previous publication.[1] A second case came to necropsy at the New Haven Hospital, and here special emphasis was laid on the pathologic physiologic process that brings about this distressing complication. The exact knowledge of the factors involved, as depicted by the operative technic used in the first case and furthermore illustrated by the detailed pathologic findings in the second observation, will clearly outline the best measures for preventing injury to vessels at the time of operation which may result in subsequent hemorrhage.

REPORT OF CASES

CASE 1.—K. F., a boy, aged 1½ years, was admitted to the surgical clinic in Leipzig, Oct. 16, 1916, with laryngeal diphtheria. The day before admission, the child became hoarse. Within a few hours, difficulty in breathing was pronounced. On admission to the hospital, the boy was intensely cyanotic; retraction of the supraclavicular fossae and of the lower costal margins on inspiration was conspicuous. Large, grayish-white plaques covered both of the enlarged tonsils; the breath was foul. A clinical diagnosis of diphtheria was probable, and on account of laryngeal obstruction, tracheotomy was imperative. The head of the patient was retracted by placing a pillow under the back of the neck. Under ether anesthesia, the trachea was exposed in the usual manner. It is important to note that although blunt dissection was utilized for the subcutaneous fat and pretracheal tissue, both skin and fascia were incised. When the trachea was exposed, it was held forward and fixed in position by hooks. Then incision of the tracheal cartilage was made from above downward, and the cannula inserted. Relief of the respiratory distress was immediate, and the patient made an uneventful recovery. On the third day after operation, the cannula was temporarily removed, and this procedure was repeated daily until breathing remained free without the cannula. The tracheotomy wound showed slight signs of infection, but these were scarcely noteworthy. The amount of necrosis was minimal, and the secretion was not abundant. Filling in of the defect by granulation and epithelization from the borders of the wound progressed rapidly. The patient's temperature continued slightly elevated (from 37.2 to 38.2 C.). Sixteen days after operation, the wound was completely covered by a thin epithelium. On the seventeenth day, six days after the permanent removal of the cannula, while the patient was sleeping soundly, a profuse hemorrhage from the mouth and nose occurred, causing sudden death.

* From the Brady Laboratory of Pathology and Bacteriology, Yale University School of Medicine.

1. Schläpfer, Karl: Ueber tödliche Nachblutungen nach Tracheotomie bei Larynxdiphtherie, Beitr. z. klin. Chir. **122**: 212, 1919.

At necropsy, a scar 1 cm. in length was seen in the lower anterior neck region. Corresponding to this area in the skin, there was a longitudinal scar 1 cm. in length in the anterior wall of the trachea. Below this scar there was a defect in the tracheal wall 0.5 cm. in length. The wound in the trachea was situated 2.5 cm. below the lower angle of the scar in the skin, when the head and neck were held vertical with the trunk. The wound in the trachea communicated with an opening the size of a pinhead in the innominate artery at the place where the artery crosses the trachea obliquely and where there is a relatively intimate connection between the two structures. The intima of the artery was everted and covered by a blood clot.

CASE 2.—S. P., a boy, aged 3½ years, was admitted to the New Haven Hospital, Oct. 18, 1919, with the complaint of difficulty in breathing. Eight days before admission, the patient suddenly became very ill and felt feverish. On the fourth day, the mother noticed white patches on both tonsils; the following day, the boy became hoarse. He was treated with diphtheria antitoxin, but breathing became more and more labored, and the child was brought to the hospital. Intubation was performed at once, but as the tube was expelled very easily, daily reintubation was necessary, for without the tube the patient rapidly became cyanotic. November 5, following expulsion of the tube, and after several fruitless attempts at reintubation, a tracheotomy was performed. The next day, the tissues about the wound were markedly swollen and were pale pink. This swelling and discoloration subsided gradually, and the tracheotomy wound granulated satisfactorily. However, persistent expectoration of foul smelling material indicated an inflammatory process in the larynx. On the ninth day after operation, the night nurse, while wiping some mucus from the child's mouth, noticed some blood in the wound. Before the patient could be brought to the operating room, bright red blood was spurting freely from the wound all around the cannula. By deep pressure on both sides of the neck, the bleeding could be stopped momentarily. During an attempt to reintubate after the wound had been packed, respiration suddenly ceased.

At necropsy there was a gaping wound with clean edges several centimeters in length, about 4 cm. above the sternum. This led into a wide cavity, partly filled with clots. After their removal, the wall of the cavity presented a ragged surface, partly covered with yellowish-green, fibrinous exudate. At its base was the trachea, also containing a considerable amount of blood clot. The pretracheal cavity extended on the right of the neck organs to the edematous anterior mediastinum. The posterior wall of this cavity was formed by the innominate artery, which was covered by a yellowish membrane. A small opening, about 2 mm. in diameter, was found on the inner surface of this vessel, and through the hole a probe could be introduced easily into the peritracheal cavity.

Serial sections demonstrated clearly how the perforation of the vessel wall had been brought about. The vessel showed

Fig. 1.—Section through innominate artery at site of injury; the markedly thickened vessel wall, ending in a sudden break on one side of the place of damage, is in contrast to the gradual sloping of the injured wall on the other side.

marked difference on the two sides of the perforation. The lower lip was thick; in fact, the adventitia was thickened by an organizing exudate. On the other hand, the upper edge presented the narrow apex of a wedge (Fig. 1). Thus, the wall was the seat of an acute inflammatory process, which spread from the point of perforation between the elastic layers of the artery. Near the place of perforation there was a slight, aneurysm-like bulging of the vessel wall (Figs. 2 and 3).

An analogous observation has been reported by Engelhardt.[2]

COMMENT

Hemorrhages occurring within a few hours after a tracheotomy are due to incomplete hemostasis. With skilful technic, avoiding unnecessary section of blood vessels in the operative field, which becomes secondarily infected, such hemorrhages can be obviated. A second

Fig. 2.—Section taken through site of injury adjacent to point of rupture; aneurysmal bulging of wall should be noted.

type of hemorrhage occurs several days, even weeks, after successful tracheotomy, and is caused by pressure of the cannula on the tracheal wall [3] or from premature separation of diphtheric membranes. A third type is discussed in this paper. It is usually fatal, comes on unexpectedly, and may occur days, weeks and, indeed, even months, after operation. It results from an injury to the wall of a larger artery or vein at the time of operation, with subsequent erosion by a necrotizing inflammation, leading to aneurysm and rupture.[4]

Historical Notes.—Koerte,[5] in 1879, was probably the first one to describe fatal hemorrhages after tracheotomy for laryngeal diphtheria. His observation did not attract attention for many years. Later, the statistical reviews of a large series of tracheotomies and their complications, in the clinics of Basle,[6] Leipzig,[7] Tübingen,[8] Vienna [9] and Zürich,[10] were published. The frequency with which these hemorrhages were observed varied in these clinics between 0.5 per cent [11] and 4.5 per cent.[12] Statistics including operative cases in rural districts, in private homes under disadvantageous conditions, or in small hospitals without the necessary assistance, might show an even higher mortality.

2. Engelhardt: Pathologisch-anatomischer und klinischer Beitrag zur Frage der Blutungen nach Tracheotomie wegen Diphtherie im Kindesalter, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **6**: 398, 1900.

3. Martina, A.: Die Arrosionsblutungen nach der Tracheotomie durch Kanülendecubitus, Deutsch. Ztschr. f. Chir. **69**: 567, 1903.

4. Schmidt, F.: Beitrag zu den Gefahren der Tracheotomie inferior (Tödliche Arrosionsblutungen aus der Arteria Anonyma), Arch. f. Ohren-, Nasen- und Kehlk. **110**: 247, 1923.

5. Koerte: Ueber einige seltene Nachkrankheiten, nach der Tracheotomie wegen Diphtheria, Arch. f. klin. Chir. **24**: 238, 1879.

6. Zimmerlin, F.: Ueber Blutungen nach Tracheotomie wegen Croup and Diphtheritis, Jahrb. f. Kinderh. **19**: 49, 1883.

7. Schläpfer (Footnote 1). Eske, K.: Ueber Arrosionsblutungen grosser Gefässe nach Tracheotomie, Diss., Leipzig, 1906.

8. Taute, M.: Ueber tödliche Blutungen im Gefolge der Tracheotomie, Beitr. z. klin. Chir. **41**: 17, 1904.

9. Gnändinger, H.: Arrosion d. Art. anonym. infolge Wunddiphtherit. b. tracheotom. Kinde, Wien. med. Bl. **4**: 1445, 1881. Ganghofner, F.: Ueber tödl. Blutungen durch Arrosion d. Art. anonym. nach der Tracheotomie, Prag. med. Wchnschr. **14**: 179, 1889.

10. Baer, G.: Tracheotomie und Intubation in Kinderspital Zürich, Diss., Leipzig, 1892.

11. Habs, R.: 572 Tracheotomien bei Diphtherie, Deutsch. Ztschr. f. Chir. **32**: 521-539, 1892.

12. Frühwald, F.: Kasuist. Mitt. aus d. Klinik f. Kinderkrankheiten d. Prof. Widenhofer in Wien., Jahrb. f. Kinderh. **23**, 1885.

Anatomic Notes.—In 115 cases of hemorrhage compiled from the literature, and including the two personal observations set forth in this paper, the source was found in the innominate artery in eighty-three patients; in the common carotid artery in five; in the inferior thyroid artery in three; in the superior thyroid artery in one; in aortic aneurysms in two, and in the right innominate vein in four; the source was not reported in seventeen.

The predominance of the innominate artery points to a special topographic anatomic peculiarity. This artery crosses the trachea from left to right shortly below the superior thoracic aperture. At the point of crossing there is a relatively loose fibrous connection. The artery is drawn up and approximated to the trachea, as proved on cadavers by Symington [13] and Foltanek,[14] especially when the head of the patient is retracted for a tracheotomy, and also when hooks are inserted into the wall of the trachea to fix it for incision. Under these conditions, when an incision is made from above toward the region of the crossing of this vessel or others, even the aorta may be injured by the knife. Incomplete exposure, fixation of vessels, and haste are the factors that play major rôles in the primary damage to the vessel, which later ruptures with further damage to the wall by extension of the inflammation in the surrounding tissue.

Damage to the common carotid and to the thyroid may result from the injury inflicted on them by relatively sharp retractors, used to hold back the neck muscles with the underlying blood vessels.

The virulence of the infective agents causing the local damage, and the general resistance of the body guiding the inflammatory reaction against the infection, are the two main factors governing the pathologic process subsequent to the primary injury at the time of tracheotomy. The extent of the mechanical impairment, together with these antagonistic factors determine the degree of damage to the tissues, and the time of occurrence of the hemorrhage by erosion. These complex conditions explain the great variability in the intervals elapsing between the injuring of the vessel wall and the

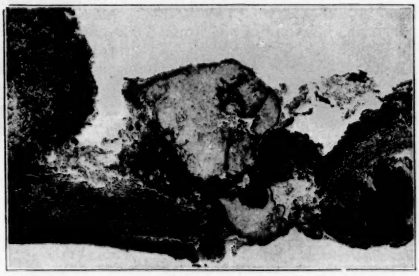

Fig. 3.—Section taken from point of rupture of innominate artery (perforating arteritis), partly occluded by a clot.

occurrence of the unexpected profuse hemorrhage taking place in a wound either in a granulating stage, as in the second case quoted above, or in an apparently healed wound after a longer period of time, as in the first observation.

13. Symington, T.: The Topographical Anatomy of the Child, Edinburgh, 1887.
14. Foltanek, C.: Ueber Blutungen nach Tracheotomie bei Diphtherie, Jahrb. f. Kinderh. **33**: 241-280, 1892.

CONCLUSIONS

Fatal hemorrhage may occur days, weeks or even months after a successful tracheotomy for laryngeal diphtheria, if the wall of a larger blood vessel is injured at the time of operation.

Incomplete exposure, fixation of the vessels, and haste are the factors that facilitate the occurrence of this primary damage to the vessel wall.

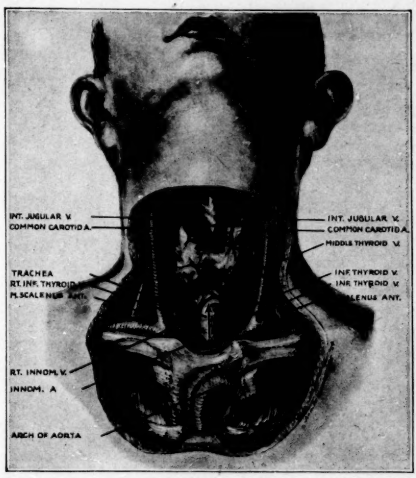

Fig. 4.—Topography of anterior neck region with head retracted; the innominate vessels rise above the suprasternal notch; the arrow indicates the place of choice for incision from below upward in inferior tracheotomy.

Necrotizing inflammation at the site of injury may play a rôle in the formation of a saccular aneurysm, as well as in its subsequent rupture.

To avoid this complication, the tissues should be handled with utmost care when the trachea is exposed. Blunt retractors covered with gauze diminish the crushing action on the tissue. Marked retraction of the head should be avoided, as this maneuver draws the innominate vessels with the trachea above the level of the suprasternal notch (Fig. 4). In inferior tracheotomy, special attention should be paid to the innominate artery, and the incision into the trachea should be made *from below upward* (see arrow in Fig. 4), for this renders less probable mechanical injury to the wall of the innominate vessels.

Effect of Hilum Node Enlargement on Lymph Flow.—If we have an inflammatory congestive process, such as is common in active tuberculosis, in the hilum area with enlarged lymph nodes, sufficient interference may be caused by the lymph flow to seriously impede, if not prevent, the direct flow of lymph toward the hilum. The infection of the lymph system, locally, and the extension of the process away from the hilum appear logical, and may account for the often rapid, progressive cases of peribronchial (pulmonary) tuberculosis after its primary appearance in the hilum region. Noninflammatory processes (merely secondary enlarged glands, dormant), therefore, with noninterference of lymph flow, may also be the explanation for the adult type (chronic), which becomes activated following influenza, for instance.—J. A. Honeij: *Am. Rev. Tuberc.* **9**:13 (March) 1924.

BROMID ERUPTION DUE TO BROMO-SELTZER

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CHICAGO

Quite a large number of drugs may produce a rash on the skin of susceptible persons. In this group the bromids not infrequently produce lesions of various types. Papules and pustules of acneiform type, macules, furuncles, wheals and ulcers have all been produced by potassium sodium, lithium and ammonium bromids.

The usual form of eruption is of an acne type, composed of large, discrete, indolent, purplish red papules and pustules situated on the face, shoulders and back. In some cases of mild type it resembles quite closely an ordinary acne; in other cases the lesions are larger

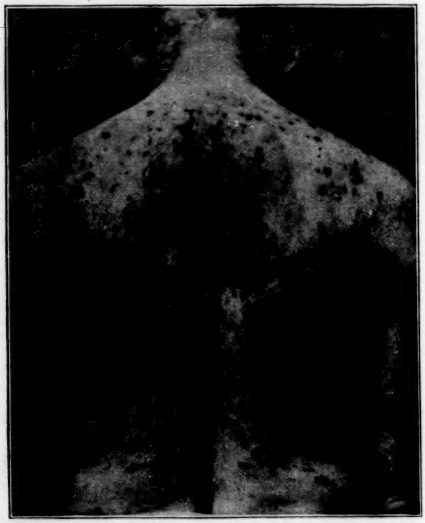

Fig. 1.—Eruption on back.

and have a tendency to coalesce and form small to large coin-size lesions, the surface of which is studded with dilated, follicular openings filled with pus. In very serious cases larger patches are present, dark purplish brown, more or less crusted, occasionally ulcerated, and usually nonpainful. Papilliform and fungoid lesions resembling, to some extent, blastomycosis are not infrequently seen. Large, flat, bluish red papules and nodules are seen more frequently in small children and infants.

A number of cases have recently been reported that illustrate the various types of lesions. It is possible for a nursing infant to develop a bromid rash in cases in which the mother is taking medicine containing bromids.

The case reported here is of unusual interest, not only on account of the extensive eruption but also from the source of the bromid.

REPORT OF CASE

A man, aged 40, began two years ago to take bromo-seltzer for headache: The patient was of a nervous type, and, owing to the sedative effect of the bromo-seltzer, he took it quite regularly, not knowing that it would prove to be injurious or harmful in any manner. He acquired the habit of taking the drug and, as usually happens, it required increasing amounts to relieve the headache and to satisfy the patient. The usual dosage was at least one-half ounce, taken daily, and the patient stated that at times he took several doses each day. Within a few weeks after he began taking the drug he developed a papulopustular eruption on the face, chest, arms and legs. The lesions were bluish red and mostly the size of a split pea; they were more numerous on the face, the upper part of the chest, and on the legs below the knees. Many, on healing, left scars, more or less pigmented. Quite a number of the lesions on the arms and thighs formed areas varying in size from that of a small pea to that of a large coin, covered with crusts and scales. Below the knees were large patches ulcerated in part, and elsewhere covered with scales and crusts; the lower third of each leg below the knees was almost entirely covered with lesion. Secondary pus infection had occurred at times, with accompanying pain and discomfort so marked that the patient was bedfast for a number of days. In addition to the generalized eruption, the patient presented the characteristic bluish cyanotic pallor characteristic of acetanilid intoxication, which condition was really of more importance than the bromid rash. The desire for the effect produced by acetanilid was in all probability the principal factor in the patient's forming the habit of taking the preparation.

One month after the patient stopped taking the bromo-seltzer, the rash had practically disappeared, the patient had gained about 10 pounds (4.5 kg.), and the peculiar pallor due to acetanilid had largely cleared up. The patient felt better in every way. When I first saw him, he was nervous and irritable; one month after stopping the drug, he said that he felt like his former self.

CONSTITUENTS OF BROMO-SELTZER

Bromo-seltzer has been analyzed by the Chemical Laboratory of the American Medical Association. The analysis showed that 100 parts of the effervescing salts contained: potassium bromid, 10.53 parts; acetanilid, 4.58 parts; caffein, 1.20 parts. Assuming the dose to be a teaspoonful, weighing 76 grains (5 gm.), each dose would contain: potassium bromid, 7 grains (0.5 gm.); acetanilid, 3 grains (0.2 gm.); caffein, 0.8 grain (0.05 gm.). Since a half ounce is frequently taken at a dose and this patient stated that this amount was taken by him daily and frequently several times a day, it can be readily seen that the preparation is not harmless but potentially dangerous.

It is difficult, in fact, impossible to state the exact amount of bromid and acetanilid taken by the patient, as the bromo-seltzer was poured out of a bottle into a glass, the usual method followed by drug clerks and soda-fountain employees in dispensing it. However, a half ounce (15 gm.) contains more than 24 grains (1.5 gm.) of bromid; more than 10 grains (0.65 gm.) of acetanilid, and about 3 grains (0.2 gm.) of caffein. On days when this patient took three doses, one-half ounce each time, he would get more than 72 grains (4.7 gm.) of bromid; 30 grains (2 gm.) of acetanilid, and 9 grains (0.6 gm.) of caffein.

The patient had taken in one day the entire contents of a bottle that retails at 60 cents. A bottle of this size contains 2½ ounces by weight, or 1,200 grains (78 gm.). This amount contains 126 grains (8.2 gm.) of potassium bromid; 54 grains (3.5 gm.) of acetanilid, and 14 grains (0.9 gm.) of caffein. As the patient's dosage varied from one-half ounce to

2½ ounces daily, he got from 25 to 126 grains of bromid, from 10 to 54 grains of acetanilid, and from 3 to 14 grains of caffein daily. Bromo-seltzer, according to this patient's statement, is taking the place of the opiate preparations among those addicted to its use. A large dose apparently satisfies the craving for opium, and all that is necessary to secure such a dose

Fig. 2.—Eruption on legs.

at certain drug stores is to ask for a "bromo with a kick in it" and the required amount will be given to the customer. The patient further volunteered the information that he knew of many people taking bromo-seltzer daily as a "bracer" in the morning before going to work.

A number of cases of poisoning and fatal results have been reported. Quigley [1] and Robinson [2] each reported a case. Hemenway [3] reported the death of a woman from acetanilid poisoning from taking bromo-seltzer. Another death was reported in THE JOURNAL: [4] A woman having a headache took a dose of bromo-seltzer which did not give relief; she then took a dose of antikamnia, the active ingredient of which is acetanilid, and died in one hour from heart failure due to the depressing action of the nostrums. Since such incidents happened in the past, others will occur in the future unless measures are taken to regulate the dispensing of such preparations.

Probably the majority of physicians do not realize how extensively bromo-seltzer is used. The sales for the year ending June 30, 1923, at one of the large retail drug stores in Chicago were almost 1,500 pounds (680 kg.). Since the vast majority of people, physicians as well as laymen, do not know that bromo-seltzer contains such a high percentage of bromid and acetanilid and is a protentially dangerous preparation, some method should be devised to put them in touch with such knowledge.

25 East Washington Street.

1. Quigley, S. T.: Acetanilid in Bromo-Seltzer, J. A. M. A. **46:** 454 (Feb. 10) 1906.
2. Robinson, W. J.: Impotence Caused by the Excessive Consumption of Bromo-Seltzer, J. A. M. A. **47:** 508 (Aug. 18) 1906.
3. Hemenway, H. B.: Death from Bromo-Seltzer, J. A. M. A. **47:** 2158 (Dec. 29) 1906.
4. The Deadly Headache Powder, J. A. M. A. **55:** 235 (July 16) 1910.

DUODENAL ULCER

ITS DIRECT VISUALIZATION BY MEANS OF ROENTGEN RAY

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NEW YORK

The one roentgen-ray manifestation of duodenal ulcer with which we will concern ourselves is the detection of a niche on the lesser curvature of the first portion of the duodenum, with an incisura opposite this point on the greater curvature of the first portion of the duodenum. The significance of this roentgen-ray sign of ulcer of the duodenum has received ample recognition abroad, while here in America it has been studied but little, with perhaps insufficient emphasis on its importance. So that, even at the risk of repetition of a good deal of what is already known and written, I wish to review this sign again.

Thanks to the valuable work of Akerlund,[1] we now have a better and more comprehensive understanding of the roentgenography of the duodenum. He has advanced the idea that we compare the first portion of the duodenum with the stomach in regard to architecture. In other words, under his classification, that border of the duodenum which follows in line with the lesser curvature of the stomach becomes the lesser curvature of the duodenum, and that border which follows the greater curvature of the stomach becomes

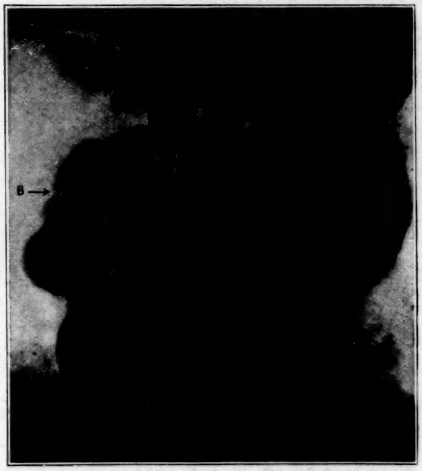

Fig. 1.—Active peristalsis, ballooning of the pyloric antrum (*A*); deformed duodenum, with incisura on the greater curvature (*B*); niche on the lesser curvature (*C*) of the duodenum.

1. Akerlund: Acta Radiol., supplement 1, 1921.

the greater curvature of the duodenum. Undoubtedly this point of view gives a clarity to the understanding of the roentgenography of the duodenum that it lacked before this important research was published. Akerlund has proved that ulcer of the duodenum gives the same alterations in luminal contour of the duodenum as gastric ulcer does in its situation, in a certain number of cases. That is to say, duodenal ulcer may manifest itself by the presence of a niche on the lesser curvature and an incisura opposite and on the same plane on the greater curvature of the duodenum. When the disease makes itself evident by these roentgen-ray signs, we have conclusive proof of the existence of the ulcer, and it is this sign only that requires no further substantiation in arriving at a diagnosis. As is well known, this cannot be said of any of the other direct roentgen-ray signs of duodenal ulcer, all of which may occur in other diseases of the gastro-intestinal canal. But it may be added that these other direct signs most frequently mean ulcer. From Akerlund's work it is not to be inferred that gastric and duodenal ulcers are alike in other respects, as in relation to their amenability to treatment, prognosis, complications, etc. It may be mentioned that Freud,[2] in 1917, called attention to the niche and incisura type of deformity of the first portion of the duodenum in ulcer; but he failed to give it the prominence that Akerlund did.

Fig. 2.—Niche (*A*) and incisura (*B*) type of deformity of the first portion of the duodenum.

It is interesting to note that about 60 per cent. of all ulcers are characterized by the presence of a niche, so that its recognition becomes of much importance. It is surprising that Carman,[3] with his vast amount of material at the Mayo Clinic, does not record this type of deformity in duodenal ulcer more frequently. He mentions its occurrence but goes no further. Of course, it is to be remembered that Cole has pointed out the relation of deformity of the first portion of the duodenum to the diagnosis of ulcer, which is an observation of utmost moment. But, together with others of the American school, he has failed to classify these deformities. One must not forget that deformity of the duodenum, except the niche and incisura type mentioned above, is not in itself sufficient evidence on which to diagnose ulcer.

It would not be amiss to insert here a case that typifies the correctness of the assertion that the niche and incisura visualized in the first portion of the duodenum is absolute proof of the presence of duodenal ulcer.

W. C., a man, aged 35, an electrician, seen in August, 1923, periodically for the last five years had been suffering from sour regurgitation, fulness after meals, and poor appetite. At no time had there been any pain. He was relieved by sodium bicarbonate. His past history was negative, except for an operation two years before for chronic appendicitis, which was thought to be the cause of the symptoms. There was no relief from the operation. Physical examination was negative except for tenderness over the pyloroduodenal region. At this time it was thought that the symptoms were due to the irregular habits of the patient. A bland diet and alkalis relieved him of all symptoms until October, 1923. At this time the symptoms returned, and pain developed in the epigastrium after meals, and also at night. There was food relief. Physical examination gave no more information than at the first visit in August. Duodenal ulcer was diagnosed, and roentgen-ray examination of the gastro-intestinal tract was advised. This was done and the accompanying roentgenograms show the typical niche and incisura type of deformity of the first portion of the duodenum. Medical treatment, with four weeks of bed rest, failed to clear up the symptoms. Operation was performed November 19, by Dr. A. A. Berg at the Bronx Hospital. A penetrating ulcer of the first portion of the duodenum was found. A partial gastrectomy and retrocolic gastrojejunostomy was done. The patient made an uneventful recovery, and has gained in weight and is able to carry on his regular occupation. To date (March, 1924) he has been entirely well.

Fig. 3.—Six hours after ingestion of contrast meal: residue in stomach and in niche (*a*) on lesser curvature of first portion of duodenum.

Held[4] has given us a very concise description of the niche and incisura type of deformity in duodenal ulcer,

2. Freud: Jahresk. f. ärztl. Forthild., August, 1917.
3. Carman, R. D.: The Roentgen Diagnosis of Diseases of the Alimentary Canal, Ed. 2, Philadelphia, W. B. Saunders Company, 1921.
4. Held, I. W.: Duodenal Ulcer, Internat. Clin. 3: 33, 1923.

and goes at some length into the reasons for the visualization of the niche on the lesser curvature in the roentgenograms, while the surgeon and the pathologist find the ulcer on the posterior wall usually. This apparent disagreement between the roentgen ray and the actual condition occurs because in ulcer we have a source of irritation in the duodenum, with resultant spasm and drawing over of the muscularis toward the lesser curvature, thus bringing the ulcer-bearing area nearer to the lesser curvature, where it is visualized on the plates.

I have not attempted to review the subject of duodenal ulcer, nor have I attempted to summarize all the roentgen signs of the disease. It has been my intention to bring forth the need of a more general recognition of the conclusiveness of Akerlund's researches and results on the roentgenography of the duodenum, and to stress the one absolute sign of the presence of duodenal ulcer. And I may state again that the niche and incisura type of deformity of the first portion of the duodenum is the only roentgen-ray sign that can stand alone as proof-positive of the existence of the disease, duodenal ulcer.

1245 Madison Avenue.

A NEW OPERATION FOR EXSTROPHY OF THE BLADDER

PRELIMINARY REPORT *

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KANSAS CITY, MO.

The object of this operation is the reconstruction of the bladder and urethra in a nearly normal position, together with a restoration of normal functional activity. The main feature is the fixation of the base of the bladder to the pelvic floor after having exposed it by the perineal route. As a result of this procedure it is placed in a nearly normal position, and intra-abdominal pressure is exerted on its vertex instead of on its posterior wall, as is usual in cases of exstrophy. This having been accomplished, a recurrence of its extroversion is impossible.

Up to the present time, the best results have been obtained by transplanting the ureters, or the ureters and trigon, into the colon or rectum. This procedure, under the best conditions, shows a high mortality rate, and there is great danger of ascending pyelonephritis.

Previous attempts at reconstruction of the exstrophied bladder have been uniformly unsuccessful. The main reason for the lack of success in these operations was that no attempt was made to replace the bladder where it normally lies, and so fix it that there could be no recurrence of its extroversion.

In the case reported here, complete reconstruction of the bladder and urethra in its abnormal position was first attempted but was almost entirely unsuccessful. The bladder normally lies behind the symphysis with its base on the pelvic floor. It then occurred to me that if this position could be attained and the base of the bladder firmly fixed to the pelvic floor, it could not be herniated again, and intra-abdominal pressure would be exerted on its vertex instead of on its posterior wall. I then decided to expose the base of the bladder through the perineum and suture it to the perineal fascia.

* From the Urological Service, Christian Church Hospital.

Normally, the peritoneum does not extend down behind the bladder farther than the top of the seminal vesicles, but in these cases it extends down to the floor of the pelvis. Consequently, it had to be freed by blunt dissection from the anterior surface of the rectum and posterior wall of the bladder, and so pushed upward that the peritoneal cavity would lie mainly above the bladder.

The abdominal wall had to be so reconstructed that the tension would be lessened on its midline sutures. Stab wounds in the lower end of each rectus muscle accomplished this, and these could also be used as places of exit for drains, which were placed down to the perivesical spaces, thus allowing the midline to be tightly and completely closed.

As a result of these procedures, the bladder was firmly fixed to the floor of the pelvis, the peritoneal cavity placed mainly above it, and intra-abdominal

Fig. 1.—Condition of patient on admission.

pressure exerted on its vertex instead of on its posterior wall, thus doing away with all possibilities of a recurrence of its extroversion.

Another important feature in the treatment was the cooperation of an orthopedic surgeon in helping with the approximation of the pubic bones. This was best accomplished, first by the application of a body cast and later by the use of a sacro-iliac belt, both cast and belt being gradually tightened.

In the case reported here, the bladder has been reconstructed and replaced in the pelvis by the foregoing method, and has remained so for ten months. The urethra has been only partially reconstructed, and the repair of the sphincters remains to be accomplished. The latter procedures will be undertaken shortly. Should their accomplishment be an impossibility, the installation of a mushroom-head catheter or the application of a suitable urinal should keep the patient dry.

REPORT OF CASE

R. R., a boy, aged 6 years, was admitted to the urologic service of the Christian Church Hospital, Jan. 15, 1923, because of incontinence of urine. The family history and past history were negative. The mother said that the birth of the child was normal and that he had never been sick. The incontinence of

urine had existed since birth, and the child was born with the deformity of the bladder now present.

The child was healthy and robust looking, and stood with the feet wide apart. The mucous membranes were of good color. Examination of the nose and throat was negative. The thorax

Fig. 2.—Longitudinal section of body, showing method of freeing peritoneum from posterior surface of bladder and anterior surface of rectum, the prostate and the base of the bladder having been first exposed as shown in Figure 3.

was well formed and symmetrical. Respiratory movements were good and equal. The heart and lungs were normal. The abdomen was full. Neither kidney was palpable in the upright posture. No mass or tenderness was made out. In the suprapubic region was seen the exstrophied bladder wall, which was reddened and excoriated, and bleeding in places (Fig. 1). Above this was a scar, the site of a previous operation. The umbilicus was absent. The portion of bladder mucous membrane seen measured about 5 cm. in diameter. Below this was a pouch containing on its upper wall the greater portion of the trigon. The two ureteral orifices were seen as slight papillae on each side just at the upper margin of the pouch, and clear urine could be seen spouting from them at intervals. On the lower wall of the pouch lay the prostatic urethra, with a rudimentary verumontanum. Complete epispadias was present, the urethra forming a trough throughout its length. There was marked redundancy of the prepuce. Both testes could be readily palpated in the inguinal canals.

The pelvis was very broad, and the rami of the pubes were 6 cm. apart, the symphysis being replaced by a stout fibrous bridge. Rectal examination was entirely negative. Examination of the extremities was negative.

No. 6 ureteral catheters passed up to the pelvis of both kidneys with ease. The urine from both kidneys was normal. Six milligrams of phenolsulphonephthalein was given intravenously. The appearance time on the right side was twelve minutes; on the left, nine and one-half minutes. In one-half hour, 12 per cent. was excreted by the right kidney and 28 per cent. by the left. Fifteen per cent. thorium solution was then allowed to flow into the pelvis of each kidney by gravity, and pyelograms were made. These showed a normal pelvis and calices on each side. A roentgenogram of the bony pelvis showed the rami of the pubes 6 cm. apart. Otherwise, the pelvis was normal. A roentgenogram of the lower intestinal tract, after a barium enema, showed it to be normal.

January 16, closure and reconstruction of the bladder and urethra were attempted, but were only partially successful. At this operation the bladder was freed from its attachment to the abdominal wall and the peritoneum, the latter being especially difficult on account of the numerous adhesions due to the previous operation. The urethra was dissected free laterally posteriorly, and completely in its pendulous portion. The corpora were separated anteriorly, and the urethra, which had been sutured together over a soft rubber catheter, was buried between them in its normal position.

The anterior wall of the bladder was sutured together, and an attempt was made to suture together fibrous bands from each ramus of the pubis over the lower part of the bladder. The bladder was drained suprapubically and by means of a retention catheter. The abdominal wall was closed by through and through silver wire sutures, and the skin of the lower abdomen and penis by a continuous suture of fine black silk. The next day the child was placed in a cast by Drs. Dickson and Diveley, and allowed to remain in it six weeks, the idea being to try to bring the symphysis together and lessen the tension on the sutures. As a result of this operation, one fourth of the bladder remained closed and about one half of the reconstructed urethra, the lower portion of the bladder wall and posterior half of the urethra having broken down. On straining, three fourths of the bladder could be made to protrude.

It was thus seen that this operation was for the most part unsuccessful. Its failure seemed to be due largely to the lack of fixation of the base of the bladder, and the fact that intra-abdominal pressure was exerted on its posterior wall, instead of on its vertex, as it would be if it were in the normal position.

March 14, the second operation was undertaken. This consisted of exposure of the base of the bladder and prostate by the perineal route, freeing the bladder suprapubically, and then drawing it down and fixing it to the perineal floor by

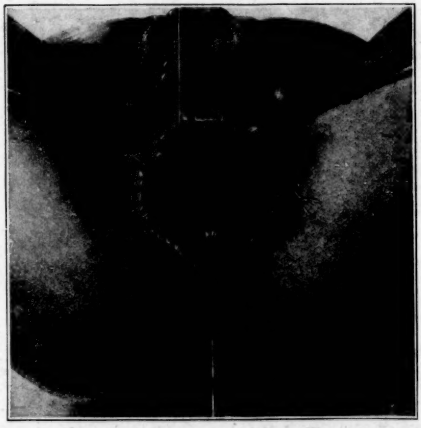

Fig. 3.—Exposure of prostate and base of bladder by perineal method; three sutures in base of bladder, attached to perineal fascia and central tendon on perineum, the levator muscles being retracted to each side.

means of sutures. The technic of the operation was as follows:

The patient was placed in an exaggerated lithotomy position on the perineal table, and was cleaned up in the usual manner. An inverted crescentic incision was made, extending from the inner surface of the tuberosity of the ischium on one side to a corresponding point on the opposite side. The skin, fat and fascia were divided by sharp dissection. The fossae on each

side were explored, and the central tendon of the perineum was divided as in Young's perineal prostatectomy. The levator muscles were then exposed, and, after these were divided by blunt dissection, the base of the bladder could be readily seen. With one finger in the bladder pouch from above and another through the perineal wound, the peritoneum was dissected free from the posterior bladder wall and from the anterior wall of the rectum and pushed upwards (Fig. 2). Three sutures were then placed in the base of the bladder, one on each side to the outer side of the trigon, and the third in the midline posterior to the trigon (Fig. 3). The lateral sutures were placed through the fascia of the pelvic floor and the median one through central tendon of the perineum. These were left untied, and attention was then directed to freeing the bladder from above by blunt dissection as far up as the rim, which was attached to the abdominal wall. This attachment was divided by sharp dissection, and all bleeding points were ligated. After the bladder was freed completely, excepting at its base, the three perineal sutures were tied, which drew the bladder well down into the pelvis. The bladder wall was then closed by continuous sutures in two layers, first the mucous membrane by plain catgut and the musculature by chromic gut. These two layers of sutures were continued down the urethra, the plain catgut being used for the urethral mucous membrane

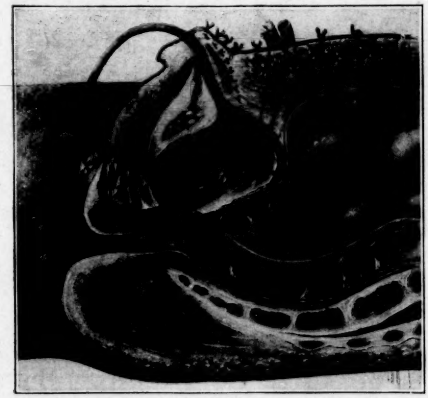

Fig. 4.—Longitudinal section of body, showing bladder replaced in pelvis, with retention catheter in place, and different sutures and drainage of perivesical spaces and perineum.

and chromic gut being used to unite the corpora, a retention catheter having first been placed in the bladder so that the urethra would not be narrowed (Fig. 4). A stab wound was then made in the lower part of the rectus muscle on each side, and through these wounds a rubber tube and cigaret drain were placed down in the perivesical spaces for drainage. The abdominal wall was closed by one through and through suture of silver wire, and the skin by interrupted sutures of plain catgut (Fig. 5).

It will be noted that the bladder was drained, not suprapubically, but only by means of a retention catheter. The perineal wound was closed by a subcutaneous suture of chromic gut, a gauze drain having first been placed down to the line of sutures in the base of the bladder. This was allowed to emerge on the right side near the apex of the perineal wound (Fig. 4).

The patient made an uneventful convalescence from this operation, and drained well through the catheter until March 22, when the catheter had to be removed on account of its being plugged with phosphatic sand. The rubber drainage tubes were removed from each side, March 18, and the silver wire suture was removed, April 10, the wound having healed completely, except for a small area in the roof of the urethra next to the bladder.

As a result of this operation, the bladder was entirely reconstructed and so fixed that there has been absolutely no recurrence of its extroversion (Fig. 6). The patient was placed in a body cast by Drs. Dickson and Diveley, and allowed to remain in it for four months, since which time he has been

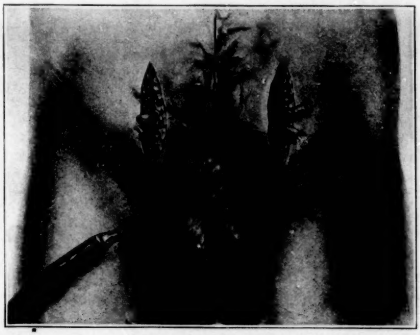

Fig. 5.—Anterior view of body after operation is completed, showing stab wounds in each rectus muscle, which are used as places of exit for drains to the perivesical spaces; the midline sutures and those on the dorsum of the penis can also be seen, as well as the retention catheter in place.

wearing a sacro-iliac belt. The roentgenogram of his pelvis now, compared with that made before the first operation, shows that there has been a narrowing of the opening of the symphysis by about 1.5 cm. The child has gained in weight, and his general condition is excellent. He has no urinary control. The bladder will hold about 30 c.c. Lately he has been wearing a mushroom-head retention catheter, which is opened and drained at intervals. By this means he has been kept dry, and it is hoped that the bladder capacity will be increased by distending it with urine and by means of irrigations.

Fig. 6.—Patient seven months after operation: complete closure of bladder and urethra except for a distance of about 1 cm. in roof of urethra.

SUMMARY

1. By this combination perineal and suprapubic operation, the bladder is placed in its normal position as nearly as possible, and so fixed by suturing it to the perineal fascia that extroversion is an impossibility.

2. Intra-abdominal pressure is exerted on the vertex of the bladder instead of on its posterior wall.

3. The abdominal wall is completely and firmly closed over the anterior wall of the bladder.

4. Drainage of the bladder is accomplished solely by means of a retention catheter.

5. Drainage of the perivesical spaces is carried out through the stab wounds in the lower end of each rectus muscle, these stab wounds also allowing complete closure of the anterior abdominal wall in the midline.

6. The approximation of the symphysis is accomplished by orthopedic treatment; viz., application of a body cast and later a sacro-iliac belt.

7. The bladder is reconstructed and replaced, and great hope is entertained of the establishment of sphincter control, together with complete reconstruction of the urethra.

1808 Federal Reserve Bank Building.

BLOCKING LYMPHATICS IN THE CONTROL OF CARCINOMA OF THE PROSTATE GLAND

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We do not know any more about the cause of cancer of the prostate than we do about cancer occurring in other organs. We do know, however, that at least 20 per cent. of all neoplasms of this gland are malignant.

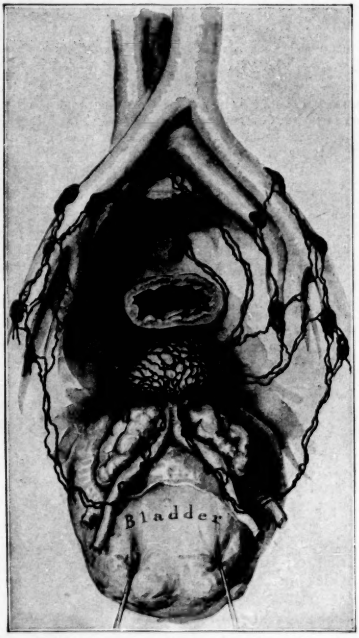

Fig. 1.—Bladder turned downward and rectum cut off; posterior wall of bladder, seminal vesicles and prostate gland visible, with lymph channels on surface of prostate forming four main trunks and draining into lymph nodes about the iliac vessels and promontory of the sacrum.

Previous to 1908, little attention was given to the treatment of carcinoma of the prostate. A review of the literature reveals a number of papers bearing on methods of partial or complete excision of the bladder neck for cancer, all carrying with them a high immediate mortality and little success in control of the cancer.

The employment of radium in irradiation of carcinoma of the prostate is comparatively recent. Minet,[1] in 1908, using the urethral route, irradiated the surface of the prostate by means of an elbow catheter with the beak hollowed out to receive the radium tube.

From this time until 1915, we find a number of reports by Désnos,[2] Pasteau, Wickham and Degrais,[3] Cauhape,[4] Schuler,[5] LeFur,[6] and Young,[7] all applying radium to the gland either in the prostatic urethra or in the rectum or in both. In 1915, Barringer [8] began irradiating the gland by passing long needles through the perineum into the carcinomatous lobes. About this time I [9] began embedding needles containing radium into the malignant gland through the suprapubically opened bladder, believing that this route gave better access to the involved area and allowed more accurate irradiation. From this time the literature has been crowded with case reports and descriptions of methods of irradiation. Janeway [10] buried emanation tubes in the prostatic cancer by inserting them through the perineum and through the rectal wall. Kolischer [11] advocated suprapubic cystotomy and electrocoagulation of the tumor mass before applying the radium. Morson [12] performed perineal section and buried radium tubes in the prostate. Bugbee [13] reported good results from needling the prostate through a suprapubic opening.

Thomas and Pfahler [14] handled bladder and prostatic cancer by a combination of surgical care, electrocoagulation, radium exposures and roentgen-ray treatments. Marion [15] pushed a hydrocele trocar through the perineum directly into the cancerous prostate. The obturator was removed, and the radium capsule, attached to a wire, was passed through the cannula into the prostate. Bumpus [16] used radium needles inserted through the perineum and, after subsidence of the reaction, again applied radium to the gland from the rectal side. Hinman [17] inserted radium into the prostatic urethra, used needles for embedding, and applied it to the rectal side by means of a bag that contained collargol for the protection of the rectal wall.

After a careful review of the literature, supplemented by my experience, I conclude that the treatment of carcinoma of the prostate resolves itself into a consideration of the following problems: (1) the control of the cancer; (2) the relief of urinary retention, and (3) the obtaining of the best possible function after the cancer has been controlled. In order to accomplish these purposes, I believe that it is essential to open the bladder suprapubically.

1. Minet: Proc. verb. A. franç. d'urol. **13:** 629-646, 1910.
2. Désnos: Bull. méd. **28:** 231, 1914.
3. Pasteau, Wickham and Degrais: Second conférence internationelle pour l'etude du cancer, Paris, 1910, p. 707; other papers, 1911, 1913.
4. Cauhape: Thesis, Paris, 1911.
5. Schuler: Wien. klin. Wchnschr. **27:** 22, 1914.
6. LeFur: Paris chir. **6:** 456-464, 1914.
7. Young, H. H.: The Use of Radium in Cancer of the Prostate and Bladder, J. A. M. A. **68:** 1174 (April 21) 1917; South. M. J. **11:** 120 (Feb.) 1918.
8. Barringer, B. S.: The Treatment by Radium of Carcinoma of the Prostate and Bladder, J. A. M. A. **67:** 1442 (Nov. 11) 1916; Radium in the Treatment of Carcinoma of the Bladder and Prostate, ibid. **68:** 1227 (April 28) 1917.
9. Herbst, R. H.: Cancer of the Prostate, J. A. M. A. **72:** 1610 (May 31) 1919.
10. Janeway, H. H.: Am. J. Roentgenol. **7:** 325 (July) 1920.
11. Kolischer, Gustav.: Am. J. Surg. **34:** 323 (Dec.) 1920.
12. Morson, C.: Brit. J. Surg. **8:** 36 (July) 1920.
13. Bugbee, H. G.: Radium in Cancer of the Prostate, J. Urol. **6:** 459 (Dec.) 1921.
14. Thomas, B. A., and Pfahler, G. E.: Tr. Sect. Urol. A. M. A., 1921, p. 268.
15. Marion, G.: J. d'urol. **7:** 335 (Aug.) 1918.
16. Bumpus, H. C.: Diverticula of Posterior Urethra, M. Clin. N. Am. **3:** 707 (Nov.) 1919.
17. Hinman, Frank: Newer Methods for Radium Treatment of Prostatic and Vesical Cancer, J. A. M. A. **72:** 1815 (June 21) 1919.

METASTASES

About one third of all patients who seek relief for cancer of the prostate show demonstrable bone metastases. A certain fair percentage have involvement of the pelvic and abdominal lymph glands (not, as a rule, demonstrable), and a small percentage have visceral metastases. So we can safely estimate that more than

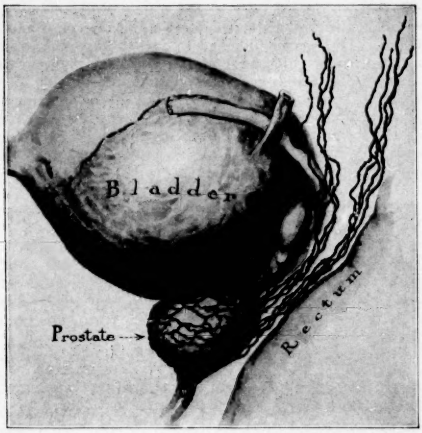

Fig. 2.—Lateral view, showing lymphatics of prostate passing up through supraprostatic space, bounded in front by the bladder, behind by the rectum, and on either side by the seminal vessels.

one half of all the patients who seek relief for this rather common condition are beyond control. This brings up the question: How may we discover these patients earlier, before they have developed metastases? Unfortunately, the symptoms in most cases are delayed until after the metastases have developed, so that the only hope for the future is that the cancer will be found in the course of a routine physical examination. A rectal examination should be a part of every physical examination, but unfortunatcly is frequently omitted. One would not think of subjecting a female to a general physical examination without a bimanual vaginal examination. Is there a better way of examining the male pelvis than a bimanual rectal examination? If this was practiced as a routine, more cases of prostatic cancer could be discovered before metastases have developed.

In order to carry out accurate irradiation of the malignant prostate, one must have a knowledge of the gross pathology of this disease, and of the lymphatic drainage of the prostate gland.

Fukase [18] has shown that rudimentary lymph nodes are present in the normal prostate, appearing as small aggregations of lymphocytes located beneath the glandular and duct epithelium. These drain into lymph channels on the surface of the gland, which finally unite into four main trunks, one from the anterior surface and three from the lateral and posterior surfaces (Fig. 1). All four trunks pass upward, through an area bounded behind by the rectum, in front by the trigon and on either side by the seminal vesicles, and finally drain into the lymph nodes about the iliac vessels (Fig. 2). It is this supraprostatic area which must receive early attention if we may hope to prevent metastases. Careful, painstaking and accurate embedding of radium into this region, even though apparently uninvolved, will have a tendency to lock off the lymphatics at this point and prevent the spread of the disease into the pelvic lymphatics and beyond our control. This is the equivalent of going well beyond a cancerous growth in excision.

18. Fukase, N.: Surg., Gynec. & Obst. 35:131 (Aug.) 1922.

PATHOLOGY

Pathologically, the disease may assume three different forms: 1. As a scirrhous cancer beginning in the posterior lower segment of the gland. In this type the disease has a tendency to follow Denonvillier's fascia and by way of the lymph channels to invade the pelvic lymph nodes. This is a rather malignant form of the disease, with a tendency toward the early development of metastases. 2. A combination of benign hypertrophy of the upper superior segment and malignancy of the lower posterior part of the gland. 3. Adenocarcinoma, a less common form of tumor, in which the entire gland is involved. This type, as a rule, is smooth and symmetrical, but harder than the benign adenoma.

SYMPTOMS

The symptoms of cancer of the prostate are often postponed until late in the course of the disease. This is particularly true of the type that develops in the posterior segment of the gland and spreads upward behind the bladder. These patients usually have no urinary symptoms, and the pain produced by metastases is the first symptom to attract their attention. The symptoms may be thus classified: (1) those produced

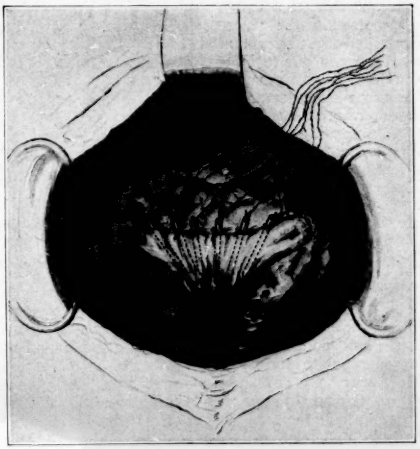

Fig. 3.—Insertion of radium needles under trigon into supraprostatic area, through which the lymphatics from the prostate gland pass upward into the pelvis.

by the growth of the gland; (2) those due to obstruction; (3) those produced by metastases; (4) general symptoms common to malignancy. The local symptoms are few, such as pubic pain, pain in the perineum, and a sensation of fulness in the rectum. The symptoms due to urinary obstruction are frequent, imperative urination, pain along the urethra radiating out to the

end of the penis, pyuria, and hematuria. This last sign is often considered diagnostic of malignancy, but is not uncommonly found in benign hypertrophy. The symptoms of metastases are pain in the back, radiating down into the thigh, often due to pressure of enlarged lymph nodes on the nerve roots as they come from the spine. The pain in the back may also be caused by bone metastases. Cachexia, anemia, loss in weight, and weakness are the general symptoms common to all forms of cancer.

A hard, nodular, asymmetrical, fixed or frozen gland with obliteration of the interlobular sulcus is the description of the rectal findings in a typical case of cancer of the prostate. However, these findings may vary. In the early stages of the disease it may be difficult to find any changes on the rectal side of the gland, or only a small nodule may be palpable. The small nodules are found more readily by palpating the gland on a sound placed in the urethra.

In the advanced cases, a hard infiltration may be felt, extending upward above the gland and along the course of the seminal vesicles. In the adenocarcinoma type, one may feel a large, symmetrical gland resembling benign hypertrophy, but the consistency is much harder.

On cystoscopic examination little may be found, especially in the type developing in the posterior segment. An elevation of the trigon due to infiltration of this area may be the only change noted. In more advanced cases, nodules projecting up into the bladder, at times ulcerated, may be seen. Trabeculation and injection of the bladder wall are found in all cases in which retention exists.

Fig. 4.—Lateral view, showing needles embedded into area under trigon through which lymphatics pass.

DIAGNOSIS

The diagnosis from benign hypertrophy ordinarily is not difficult, especially if the rectal and cystoscopic findings are at all characteristic. The discovery of a small, hard nodule in any part of the gland should be looked on with suspicion and followed up carefully. Metastases may develop from such a nodule without any other changes occurring in the gland. The differentiation from the hard, fibrous prostate may offer some difficulty and may not be possible without microscopic sections. There are cases in which all characteristic signs and symptoms are absent and malignancy is not suspected until after the microscopic examination.

TREATMENT

We have the same problem in the relief of urinary retention in cancer of the prostate as we have in benign hypertrophy. Unless the upper urinary tract is protected by drainage, these patients will succumb to infection and destruction of the kidney as they do in benign hypertrophy. I believe that this drainage is best accomplished by suprapubic cystotomy, which also gives an opportunity for the accurate embedding of radium into the area above the prostate through which the lymphatics pass (Figs. 3 and 4). The same accuracy cannot be accomplished by directing needles through the perineum, and I believe that the accurate embedding into this area is the important step in the control of the malignant prostate. When once this area is locked off, there is less danger of the cancer cells spreading through the lymphatic channels to the pelvic lymph nodes. This may be likened to excising a tumor with a scalpel, and going beyond the limits of the growth through healthy tissue. Suprapubic cystotomy also gives an opportunity for removal of the benign upper segment of the gland when associated with malignancy of the lower segment. This benign area is not influenced by radium, and, if allowed to remain, prevents good urinary function when once the cancer is controlled. The benign lobe, as a rule, can be enucleated without much difficulty. If it is found adherent to the lower posterior segment, it can usually be separated by blunt dissection and scissors.

It seems obvious that a suprapubic cystotomy gives the opportunity to accomplish best the three problems that confront us in malignancy of the prostate gland: i. e., control of the cancer, relief of urinary retention, and the establishment of good urinary function after the cancer has been controlled. When the lymphatics leading from the prostate gland have been blocked by the action of radium, the malignancy in the gland proper may be taken care of by introducing needles through the perineum, supplemented by urethral and rectal applications. Roentgen-ray therapy is undoubtedly of some value in conjunction with these other methods.

The failure to control the disease in the past has been due, at least in some instances, to the haphazard introduction or application of radium to the malignant prostate. A knowledge of the lymphatic circulation, together with the establishment of good drainage of the urinary tract, is essential to success in the control of the disease. Accuracy, coupled with attention to detail, is as important in the control of cancer of the prostate as in any other surgical procedure.

104 South Michigan Avenue.

Treatment of Simple Goiter.—Perhaps the most satisfactory plan of medical treatment is to administer from 2 to 4 gm. of desiccated thyroid in 0.2 gm. doses daily, and, after allowing an interval of two weeks without treatment, to saturate the thyroid with iodin by giving 30 c.c. of syrup of hydriodic acid or its equivalent in iodin in from 1 to 2 c.c. doses daily. This treatment may be repeated every third or sixth month. The maximum reduction will occur in from six to twelve months.—T. Clark: *Pub. Health Rep.* **39**:110 (Jan. 18) 1924.

OBSERVATIONS ON PROTARGIN STRONG AS A PREOPERATIVE PROPHYLACTIC *

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At the suggestion of Dr. F. H. Verhoeff, an attempt was made to determine the effectiveness of the preparation of the eye for operation at the Massachusetts Charitable Eye and Ear Infirmary. In forty cases, cultures were taken before and after preparation. The work was done merely to find out in what measure the preparations, as carried out as a routine at this hospital, were effective. As the results may be of more than local interest, they are reported here.

The routine preparation of the eye at this hospital consists of the instillation of 4 per cent. protargin strong as soon as the patient is brought to the operating room. Then a wide region surrounding the eye is painted with 2 per cent. iodin, including the eye brow and lids (the eyelashes have previously been cut) up to the lid margins. The conjunctival sac is then irrigated with saturated solution of boric acid. In cataract cases, the conjunctival flap is made before the irrigation with boric acid solution.[1] The protargin strong remains in the conjunctival sac about five minutes or less before it is irrigated with boric acid solution. In cataract cases, of course, it remains there somewhat longer because of the time consumed in making the conjunctival flap. After the preparation is completed, the internal canthus is wiped with cotton swabs.

The mediums used for cultures were slants of Loeffler's blood serum, with 2 c.c. of glucose bouillon in the bottom of the tube.

The technic employed was as follows: before the preparation was begun, physiologic sodium chlorid solution was instilled into the conjunctival sac and withdrawn with a sterile medicine dropper. Three drops of this solution from the conjunctival sac was put into the glucose bouillon at the bottom of the test tube, and the tube was shaken; in so doing, care was taken not to allow the bouillon to splash up on the surface of the medium. After the bouillon and salt had been mixed, this fluid was allowed to flow over the surface of the medium once. After the preparation was completed and just before the operation was begun, a procedure similar to that described above was repeated. In eighteen cases, cultures were taken of the first cotton swab used to wipe the internal canthus.

All the eyes of which cultures were taken were free from any apparent conjunctivitis. They were either cataract cases, squint cases or the like.

The colonies on the surface of the medium were counted after forty-eight hours' incubation.

The organisms found, in order of frequency, were *Staphylococcus aureus* and *albus, Bacillus xerosis,* streptococcus, rarely pneumococcus, and medium liquefying saprophytes.

From the forty cases, the number of colonies present on the cultures taken before preparation, as compared with those present on the cultures taken after the preparation, were in a ratio of 3.5:1. That is, the preparation of the eye reduced the number of bacteria in the conjunctival sac by about two thirds. In fourteen cases, or 35 per cent., the culture taken after the preparation showed no growth; but in five of these fourteen cases, or 35 per cent., also the culture taken before the preparation was sterile. This does not necessarily mean that the conjunctival sac was sterile or rendered sterile by the preparation, but that, by the technic employed, no organisms were obtained. It was at least relatively sterile. In five cases (the same cases as mentioned above), or 12 per cent., the culture taken both before and after the preparation showed no growth. In sixteen cases, or 40 per cent., the culture taken after preparation showed no colonies on the surface of the medium, but the bouillon was cloudy and showed sedimentation. These were interpreted as being cases in which the organisms were so few at the time the bouillon was inoculated that none remained on the surface of the medium; but the few bacteria present in the bouillon had proliferated, thereby giving the cloudiness and sediment. In eighteen cases, or 45 per cent., cultures were taken of the cotton swab used to wipe the internal canthus, after the preparation was completed, and in practically every case the culture showed innumerable colonies. In every case there were as many as or more than on either of the other two cultures. In these cases the colonies of *Bacillus xerosis* almost always predominated. This is what one would expect because, when the internal canthus was wiped, after the preparation was completed, flakes of coagulum stained with protargin strong were seen on the cotton swab. It was on these flakes of fibrin and mucus, that these saprophytes lived. The fact that protargin strong stains these flakes of solid matter in the conjunctival sac is of practical importance to the operator, as it enables him to remove macroscopic particles that would otherwise be invisible.

It is interesting to note that, although positive cultures were obtained in twenty-six cases, or 65 per cent., after the preparation was completed, not one of these cases, or any of the forty cases, showed infection following the operation. Nine of the twenty-six cases, or 35 per cent., were cataract cases in which the organisms found on the culture taken after the preparation ranged from cloudiness of the bouillon to twenty-six colonies on the surface of the medium.

As the organisms in the conjunctival sac were reduced only by about two thirds as a consequence of the preparation, it was felt that similar results could be obtained by merely mechanically irrigating the sac with physiologic sodium chlorid solution. In fifteen cases, the unoperated eye was simply irrigated with physiologic sodium chlorid solution without instilling any protargin strong. The results were just the same as in those cases in which protargin strong was used.

The stock protargin strong, which was about 3 weeks old, was tested in vitro to determine its germicidal properties. Freshly made protargin strong was tested along with the stock protargin strong for comparison. In all tests, 3 c.c. of protargin strong was used. A suspension of staphylococci in distilled water was added to 3 c.c. of protargin strong in 3, 4 and 5 drop amounts. A loop of the mixture was removed, and cultures were taken immediately as a control and succeeding loops at two and five minute intervals. A similar procedure was carried out with a suspension of staphylococci in physiologic sodium chlorid solution, the 3, 4 and 5 drop amounts being used in 3 c.c. of protargin strong and a loop being cultured for control and at two and five

* From the pathology laboratory of the Massachusetts Charitable Eye and Ear Infirmary, Boston.

* Protargin strong is the nonproprietary name adopted by the Council on Pharmacy and Chemistry for such proprietaries as protargol, proganol and protargentum.

1. This procedure is not uniform. Some of the surgeons prefer to do it, and some do not.

minute intervals. The results are given in the accompanying table.

As shown in Column 1, fresh 4 per cent. protargin strong is an excellent antiseptic in vitro when the organisms are suspended in distilled water. Most of the bacteria were killed even before the control could be removed—probably in about thirty seconds. All were killed at the end of two minutes.

The stock protargin strong, which was a few weeks old in the tests recorded in Column 3, had lost some of its germicidal properties in contrast to Column 1, in which the same procedure was carried out with fresh protargin strong. However, it still possessed quite strong antiseptic properties. All organisms were killed in two minutes except when 5 drops of the suspension was used. This agrees with the results obtained by Cheney,[2] who showed that the antiseptic properties of protargin strong decreased with the number of organisms added. He attributed it to the fact that staphylococci have a tendency to clump, and the organisms forming the nucleus of the clumps were not reached by the protargin strong in the allotted time because of the that the antiseptic properties of protargin strong were greatly decreased in the presence of hydrocele fluid. The explanation of this may in part, at least, be the presence of salt in the serum.

If one adds about 3 parts of protargin strong to about 1 part of physiologic sodium chlorid solution, one sees after a short time a white precipitate, which is probably silver chlorid. In the case of the stock protargin strong, the precipitate is quite marked; whereas, in that of the fresh protargin strong, it is very slight. The reduction of the antiseptic properties of the two preparations when salt solution is added is in about the same proportion as the quantity of precipitate in the two when salt solution is added.

Protargin strong is a silver proteinate. The probable explanation of the chemical reaction is that the silver in the presence of salt combines with the chlorin, and the protein radical with the sodium. The amount that disassociates is in proportion to the age of the protargin strong.

As the salt concentration of the lacrimal gland secretion is greater than that of physiologic sodium chlorid

*Results of Experiments**

Freshly Made 4% Protargin Strong Solution		4% Protargin Strong Solution from Stock. About 3 Weeks Old	
1. Staphylococci Suspended in Distilled Water	2. Staphylococci Suspended in Physiologic Sodium Chlorid Solution	3. Staphylococci Suspended in Distilled Water	4. Staphylococci Suspended in Physiologic Sodium Chlorid Solution
3 Drops of Suspension	3 Drops of Suspension	3 Drops of Suspension	3 Drops of Suspension
Control = 8 colonies	Control = innumerable colonies	Control = innumerable colonies	Control = innumerable colonies
2 min. = sterile	2 min. = sterile	2 min. = sterile	2 min. = innumerable colonies
5 min. = sterile	5 min. = sterile	5 min. = sterile	5 min. = innumerable colonies
4 Drops of Suspension	4 Drops of Suspension	4 Drops of Suspension	4 Drops of Suspension
Control = bouillon cloudy and sediment	Control = innumerable colonies	Control = innumerable colonies	Control = innumerable colonies
2 min. = sterile	2 min. = sterile	2 min. = sterile	2 min. = innumerable colonies
5 min. = sterile	5 min. = sterile	5 min. = sterile	5 min. = innumerable colonies
5 Drops of Suspension	5 Drops of Suspension	5 Drops of Suspension	5 Drops of Suspension
Control = 13 colonies	Control = innumerable colonies	Control = innumerable colonies	Control = innumerable colonies
2 min. = sterile	2 min. = 7 colonies	2 min. = bouillon cloudy and sediment	2 min. = innumerable colonies
5 min. = sterile	5 min. = sterile	5 min. = sterile	5 min. = innumerable colonies

* Three cubic centimeters of 4 per cent. protargin strong used in each experiment.

poor penetrating power of protargin strong. There must be some other factor in the explantion, though, because similar clumps would be in the 3 and 4 drop amounts.

The procedure in Column 2 was the same as in Column 1, except that the organisms were suspended in physiologic sodium chlorid solution instead of distilled water. By contrasting Column 1 with Column 2, one can see that the addition of the salt materially reduced the antiseptic properties.

Column 4 shows most striking results. The stock protargin strong was rendered absolutely inert as an antiseptic when even 3 drops of the suspension in physiologic sodium chlorid solution was used. If one contrasts this with Column 3, in which the same procedure was carried out with the same protargin strong except that the organisms were suspended in water instead of salt, one sees the effect of even 3 drops of physiologic sodium chlorid solution in so large a quantity as 3 c.c. of protargin strong. After five minutes, the number of colonies may have been a few less than on the control, but even this is doubtful. Verhoeff [3] and Derby [4] showed solution, it is reasonable to assume that the condition in the conjunctival sac when protargin strong is used simulates that of Columns 2 and 4.

Experiments were done on rabbits whereby a suspension of staphylococci in distilled water was instilled into the conjunctival sac of both eyes. After about three quarters of an hour, fresh protargin strong, 4 per cent., was instilled into the conjunctival sac of one eye over a period of eight minutes. The sac was then irrigated with one bulb of physiologic sodium chlorid solution, and a culture was taken. The other eye, which had no protargin strong, was simply irrigated with one bulb of physiologic sodium chlorid solution, and a culture was taken. For all practical purposes, the cultures from the two sides showed equal growths. A few less colonies in the eye that had no protargin strong was a rather constant finding. The same procedure was carried out in all variations—that is, using stock protargin strong, organisms suspended in distilled water and in physiologic sodium chlorid solution, etc. Under these conditions one can obtain just as great a reduction of organisms by mechanical irrigation of the sac. The noninfecting organisms of the conjunctival sac are probably embedded in a film of mucus over the conjunctival surface. If such is the case, a good solution for irri-

2. Cheney, R. C.: Am. J. Ophth., August, 1923.
3. Verhoeff, F. H.: J. A. M. A., 1906.
4. Derby, G. S.: Trans. Am. Ophth. Society, 1906.

gating the eye would be that of sodium bicarbonate, as it would dissolve the mucus. Infecting organisms are for the most part intracellular (cells of conjunctiva and leukocytes), and these are probably not to be reached by antiseptics and very few by irrigation.

CONCLUSIONS

1. Four per cent. protargin strong is an excellent antiseptic in vitro.

2. Assuming that protargin strong in the presence of the salt in the lacrimal secretion is simulated in vitro by protargin strong in the presence of physiologic sodium chlorid solution: (*a*) The effectiveness of fresh protargin strong, when used as an antiseptic in the conjunctival sac, is reduced. (*b*) Protargin strong is inert as an antiseptic in the conjunctival sac when it is about 3 weeks old. The same protargin strong is still an excellent antiseptic when no salt is present.

3. After the preparation is completed, a large number of bacteria can be removed from the field of operation by wiping the lacrimal bay with cotton swabs.

50 West Fifty-Second Street.

RATE OF SUGAR ABSORPTION IN THE NEW-BORN

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I present the results of a limited number of cases in which I have plotted the blood sugar curves of newborn infants following the ingestion of given sugars. The curves are not as numerous as I should desire, but I believe that they give a fairly accurate picture of the metabolism of the carbohydrates. In the cases studied, the number of children fed glucose was twelve; galactose, four; levulose, seven; maltose, eleven; lactose, fourteen, and sucrose, sixteen. Much work has been done on blood sugar curves, but, unfortunately, most of the observers working with children used Bang's method, which I believe is very unreliable.

PROCEDURE

The procedure was simple. The subjects were all infants aged under 14 days; some were breast fed and others bottle fed. The blood sugar was first determined; then the infant was given by gavage 3 gm. of the desired sugar per kilogram of body weight. It was necessary to feed the child by gavage, as in an earlier experiment, in which the child was given the sugar from a bottle, the feeding time varied so much that the results were not comparable. After the taking of the carbohydrates, the blood sugar determinations were taken at regular intervals.

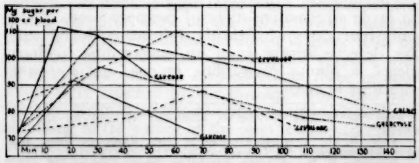

Chart 1.—Individual blood sugar curves (monosaccharids).

Of the results reported, the curves for galactose and levulose were taken from the earlier series, with three exceptions in which the infants were fed from the bottle, so that they are the least reliable of the group. This was necessitated because of the present cost of these monosaccharids.

I used the Folin and Wu method of blood sugar determination with the exception that I used only 2 c.c. of blood. When this small amount of blood was employed, the inaccuracy was shown to be not more than 3.1 per cent.

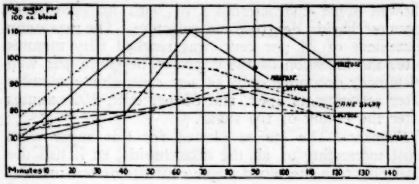

Chart 2.—Individual blood sugar curves (disaccharids).

RESULTS

Glucose.—This showed the most astonishing rapidity of increase of the blood sugar of any of the carbohydrates. The apex, representing an increment of approximately 40 per cent. of the first blood sugar determination, was reached between sixteen and twenty-one minutes after its ingestion. However, the maximum increase was poorly sustained, as it fell from 75 to 80 per cent. within twenty minutes after it reached its vertex, and attained its original level within fifty minutes.

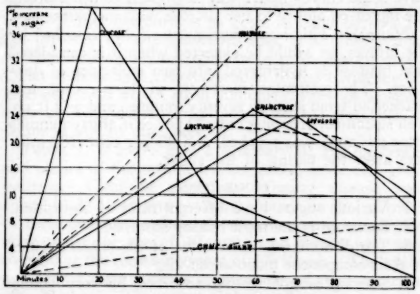

Chart 3.—Composite blood sugar curves (percentage of increase).

Galactose.—This, the second monosaccharid to be used, is represented by curves from early series, in which it was administered by bottle. The results, therefore, are open to criticism. However, I think it advisable to give the results as I found them. The apex of blood sugar increase was not reached for from forty-five to sixty minutes. The increment was only 25 per cent. However, this was fairly well maintained, as it dropped only 30 per cent. in thirty minutes and 63 per cent. in 100 minutes.

Levulose.—All the results, with three exceptions, were taken from the early series of experiments; however, the last three curves that were plotted after the monosaccharid had been administered by gavage were

very similar to the original observations. The apex of the curves was not reached for from sixty to seventy-five minutes, and the increment was the least in any of the monosaccharids, amounting to only 24 per cent. The descent was quite prolonged. Thirty minutes after the apex was reached, the increment had fallen 50 per cent., and it had fallen 85 per cent. in 100 minutes after the giving of the sugar.

Lactose.—The first of the disaccharids to be studied showed some characteristics of both its constituent monosaccharids, dextrose and galactose. The maximum increment of 24 per cent. was reached fifty minutes after the ingestion of the sugar. The curve was well sustained, dropping only 14 per cent. thirty minutes after reaching its apex, and 35 per cent. 100 minutes after the taking of the sugar.

Sucrose.—The curves plotted for this sugar were most interesting of all the disaccharids, as it had the least effect on the blood sugar contents of our infants. The increment was only 15 per cent. of the first blood sugar determination, and the maximum was not reached for from eighty to ninety-five minutes; but the curve was well sustained, falling only 2 per cent. thirty minutes after the apex was reached, and 8 per cent. 100 minutes after the taking of the sugar. This is surprising, especially as sucrose has been so extensively used; but the curves would indicate that this sugar is not readily absorbed by infants under 14 days of age, although older children may handle it most easily. I have some curves under way at present to demonstrate the increased ability to use sucrose with increasing age.

Maltose.—This sugar was most readily absorbed by the infants, as would be expected when it is considered that maltose is hydrolyzed into two molecules of dextrose. The maximum increment of 42 per cent. was reached in from sixty to seventy minutes, and was fairly well sustained, dropping only 20 per cent. thirty minutes after the apex was reached, and 40 per cent. 100 minutes after the taking of the sugar.

CONCLUSIONS

1. Various sugars have different rates of absorption.
2. Dextrose is the most readily absorbed.
3. The disaccharids show some of the characteristics of their component monosaccharids.
4. Sucrose is not readily absorbed by very young infants, but the ability to utilize this sugar increases with the age of the infant.

2200 Hayes Street.

Diagnosing Psychoses.—In psychoses, the application of psychotherapy is an error. . . . The diagnosis of neurasthenia is made much too often. True constitutional neurasthenia is rather rare. In most cases, what is called neurasthenia is the surface play of psychosis, of toxic or infectious damage of the nervous system, or the nervous irradiation of somatic ailment. . . . It is much more important to adjust the life of the neurasthenic patient to his limitations than to administer bromid, valerian, iron, arsenic, electrotherapy or hydrotherapy. . . . The greatest number of diagnostic errors falls into the domain of hysteria, or, as the author prefers to call it, "psychogenia," for it is as Charcot expressed it "la grande simulatrice." . . . Psychotherapy is the keynote of the treatment of psychogenia. The medium—electric, hydriatic, dietetic, etc.—through which this is administered is less important than the way in which this is applied and the patient's attitude toward it. Thus, the same treatment may have very different success in different hands and with various patients.—Meyer, E.: Diagnostische und therapeutische Irrtümer und deren Verhütung, Leipzig, 1923.

THE HEART IN ARTHRITIS DEFORMANS *

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The association of acute articular rheumatism or acute rheumatic fever with cardiac lesions is too well known to warrant comment. That organic cardiac defects are frequently found in patients with chronic multiple arthritis is not so generally recognized. Indeed, Bouillaud, who was the first to emphasize the importance of acute articular rheumatism in the etiology of heart disease (1836), taught that the heart was not involved in subacute or chronic arthritis. Todd,[1] in 1843, was probably the first to describe a case of arthritis deformans with associated cardiac lesions, and, three years later, Romberg [2] recorded a similar case. Charcot [3] confirmed these observations and wrote: "Cardiac lesions are found pretty frequently in nodular rheumatism. There has generally been in these cases at a former period an attack of acute rheumatism; but I have collected a considerable number of cases in which endocarditis has developed in chronic rheumatics without the disease having ever assumed an acute form." During the latter half of the nineteenth century, a good many views concerning the incidence of heart disease in patients with arthritis deformans were expressed. The weight of opinion seemed to be that in those cases of arthritis deformans of slow, insidious onset, cardiac involvement did not occur, but that in those ushered in by an acute febrile attack of arthritis, the heart was often implicated.[4] Strümpell, in his textbook of medicine, says, "Valvular defects are uncommon and occur usually only in those cases which have developed from an acute polyarthritis." McCrae,[5] on the other hand, found forty cases of valvular disease, or 8 per cent., in a series of 500 cases of arthritis deformans. Blanc [6] noted heart lesions in 7 per cent. of 200 cases, Barjon [7] in 21 per cent. of sixty-two cases and Bannatyne [8] in 17.9 per cent. of 293 cases. These statistics are of no great value, for none of the authors have attempted to distinguish arteriosclerotic from inflammatory valvular lesions, and, in many instances, have accepted a systolic murmur as evidence of heart disease. For example, a study of Barjon's case reports, with the elimination of doubtful cases, leaves only 11 instead of his 21 per cent. with unequivocal infectious valvular defects. Kast,[9] who made an intensive study of necropsy protocols of twenty-four cases of arthritis deformans, found valvular defects arising from an endocarditis in four patients, a fibrous pericarditis in one, and a recent pericarditis in one.

* From the Medical Division of Montefiore Hospital for Chronic Diseases.

1. Todd, R. B.: Practical Remarks on Gout, Rheumatic Fever and Chronic Rheumatism of the Joints, London, 1843, pp. 179-181.
2. Romberg, M. H.: Klinische Ergebnisse, Berlin, 1846, p. 115.
3. Charcot, J. M.: Clinical Lectures on Senile and Chronic Diseases, New Sydenham Society, London, 1881, p. 172.
4. Dupuy, P.: Le cœur dans le syndrome rheumatisme chronique primitif, Thèse de Paris, 1904; Barié, E.: Le cœur dans le rheumatisme chronique, Arch. gén. de méd. **2**: 2881, 1904.
5. McCrae, Thomas: Arthritis Deformans, in Osler's Modern Medicine **5**: 914, 1915.
6. Blanc, L., and Guyenot: Les affections cardiaques à Aix les Bains, Congres. interhat. d'hydrologie, de climatologie et de géologie de Grenoble, 1902.
7. Barjon, F.: La radiographie appliquée à l'etude des arthropathies déformantes, Paris, 1897.
8. Bannatyne, G. A.: Rheumatoid Arthritis, Bristol, 1904.
9. Kast, L.: Ueber das Verhalten der Herzaffektionen bei chronischem Gelenkrheumatismus resp. Arthritis Deformans, Prag. med. Wchnschr. **26**: 493, 1901.

The subject has been of interest to us not alone from the point of view of establishing the frequency of this visceral involvement, but also as it might throw some light on the etiology of the disease. For, if arteriosclerotic, traumatic and congenital lesions are ruled out, all valvular defects have an infectious origin. If, then, one were to find many instances of nonarteriosclerotic valvular disease in patients with arthritis deformans, the thought would suggest itself that in these cases both the heart and the joint lesions have developed on an infectious basis.

Through the courtesy of Dr. P. W. Nathan, we have personally studied, in the orthopedic wards of Montefiore Hospital, eighty cases of arthritis deformans, paying particular attention to the heart. We have studied the incidence and character of heart disease in these patients, in relation to the age of the patient and the mode of onset, course, duration and character of the arthritis.

There is so much confusion and uncertainty concerning the classification of chronic joint disease that it is essential to define the types of cases that we have studied. We have followed McCrae in designating as chronic multiple arthritis or arthritis deformans "the group of cases of arthritis which have as prominent features a tendency to chronicity and to more or less permanent change in the joints or structures about the joints, those forms of arthritis with a definite etiology being excluded." We have termed the onset "acute" when evidence of arthritis, namely, pain, tenderness, limitation of motion and swelling of the joint, with or without fever or constitutional symptoms, developed suddenly or within one week in one or more joints; "subacute," when the signs and symptoms developed in the course of two months, and "insidious," when the joint disorder became slowly manifest in the course of months or years. The course of the disease has been called acute when at least three joints became involved during the first week of the polyarthritis; subacute, when a similar condition developed in more than one week but in less than two months, and chronic, when more than two months elapsed before three or more joints were attacked by the disease. The cases were further classified as hypertrophic or atrophic arthritis, according to the nature of the joint lesion. In the few instances in which the type of lesion was mixed, they were grouped according to the dominant changes in the joints. With few exceptions, the diagnosis was supported by roentgen-ray evidence.

TABLE 1.—*Patients with Chronic Multiple Arthritis*

	Number	Per Cent.	Average Age in Years		Average Duration of Arthritis, Years
			At Onset	At Present	
Infectious valvular disease	14	17.5	28	38.4	10.4
Doubtful	11	13.75	30.1	38	7.9
Arteriosclerotic cardiopathies	21	26.3	54.5	64.2	9.7
Normal hearts	34	42.5	33.3	41.9	8.6
Total	80		37.5	46.5	9.1

The diagnosis of valvular disease on an infectious basis was made only in the presence of a diastolic murmur, either aortic or mitral, or a systolic apical murmur accompanied by cardiac enlargement, in the absence of arteriosclerosis, hypertension or other possible causes of mitral insufficiency. The younger the patient, the more probable that our etiologic diagnosis is correct. We have ventured to ascribe an infectious etiology to these lesions because of their great similarity to those valvular defects which are known to be induced by an infectious agent. We are at a loss to explain them on any other basis. All cases in which there was some doubt as to the existence of an organic lesion of the heart, for instance, patients with murmurs and no enlargement, have been designated as doubtful as far as the heart is concerned.

TABLE 2.—*Classification According to Age*

	Number of Cases	Infectious Valvulitis		Doubtful		Arteriosclerotic		Normal	
		No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Age at Onset:									
40 and under	50	14	28	10	20	2	4	24	48
Over 40	30	0	0	1	3.3	19	63.3	10	33.3
Present Age:									
40 and under	33	9	27.3	6	18.2	0	0	18	54.5
Over 40	47	5	10.6	5	10.6	21	44.7	16	34.0

In older persons, arteriosclerosis, hypertension and, occasionally, syphilis, may complicate the clinical picture. We have placed in the category of arteriosclerotic heart disease patients who had enlarged hearts with apical or basal systolic murmurs, with signs of peripheral arteriosclerosis, or with hypertension. The evidence is presumptive that the heart lesion is due to sclerosis of the mitral or aortic valve, or secondary to hypertension. It is true that some of these patients may have had infectious valvular disease, but the uncertainty of that diagnosis is so great in older persons in the presence of arteriosclerosis and hypertension that we have deliberately excluded them from this category. Other authors have called attention to the frequency of arteriosclerosis of the aorta and aortic valve in patients with arthritis deformans.[10] Syphilis has not been a factor in any of our cases.

Tables 1, 2 and 3 give a summary of the incidence and nature of the cardiac lesions in our series of eighty patients. Clear-cut infectious valvular disease was found in 17.5 per cent. of all the cases, in 28 per cent. of those patients in whom the disease started when they were under the age of 40, and in no person who was over 40 at the commencement of his illness. The average age of these patients at the onset of their arthritis was 28 years. The series is too small to warrant conclusions as to the distribution of the valvular lesions.

TABLE 3.—*Classification of Cases of Infectious Valvular Disease*

Lesion	Number
Aortic insufficiency	1
Mitral insufficiency with cardiac hypertrophy	3
Mitral stenosis and insufficiency	3
Aortic and mitral insufficiency	3
Aortic insufficiency with mitral stenosis and insufficiency	1
Pericarditis with mitral insufficiency	3
Total	14

The incidence of pericarditis is worthy of mention. In one case a fibrous pericarditis was discovered at necropsy. The frequency of this finding in chronic multiple arthritis has often been noted in the literature.[11] Acute fibrinous pericarditis occurred in two cases. This complication, too, has been described by other observers.

The frequency of arteriosclerotic heart disease and of cardiac enlargement in the older age groups is greater

10. Lancereaux: Union méd. **49**: 25, 1890.
11. Barié (Footnote 4); Bannatyne (Footnote 8).

than one would expect to find in a control series. Twenty-six per cent. of all cases, and 63 per cent. of those patients who were over 40 when the arthritis began gave evidence of this type of cardiopathy. The average age of these patients at the onset of their illness was 54.5 years. Hypertension was infrequent in this series, and in no case was it well marked. There were no systolic pressures over 180 mm. of mercury.

TABLE 4.—*Classification According to Type of Onset and Course*

Type of Onset	Number of Cases	Average Age at Onset, Years	Average Age Present Age, Years	Infectious Valvulitis No.	Infectious Valvulitis Per Cent.	Doubtful No.	Doubtful Per Cent.	Arteriosclerotic No.	Arteriosclerotic Per Cent.	Normal No.	Normal Per Cent.
Acute.....	38	33	40.9	9	23.7	6	15.8	5	13.2	18	47.4
Subacute...	15	38.1	45	2	13.3	4	26.7	4	26.7	5	33.3
Insidious...	27	43.5	55.5	3	11.1	1	3.7	12	44.4	11	40.7
Course of Disease											
Acute.....	11	24.8	34.5	5	45.5	1	9.1	0	0	5	45.5
Subacute...	16	38.5	44.2	1	6.3	4	25	6	37.5	5	31.2
Chronic....	53	39.5	49.9	8	15.1	6	11.3	15	28.3	24	45.3

Forty-three per cent. of all the patients studied, therefore, presented some form of heart lesion. In the younger patients, this took the form of an endocarditis; in the older age groups, of an arteriosclerosis of the valves. Does this mean that under the category of chronic multiple arthritis we have included two different types of disease of different etiology, or that the heart at different ages reacts differently to the same noxious agents? In an endeavor to answer this question we have classified our cases according to the type of onset and course of the arthritis, as well as to the character of the bone and joint disease, and have studied the relationship of these various factors to the cardiac complications in the whole series, as well as in the different age groups.

In Barjon's series there were seven patients with endocarditic lesions. Of these, the onset was acute in four, and insidious in three. In Kast's four patients with endocarditis there were three in whom the onset was acute. In view of the fact that, as is shown in Tables 2 and 4, the incidence of the different types of heart disease, as well as of several of the factors mentioned above, is correlated so closely with the age of the patients, it becomes necessary to compare cases belonging to the same age groups. A study of the figures, with this reservation, does not allow the conclusion that

TABLE 5.—*Classification According to Nature of Joint Disease*

Joint Lesion	Number of Cases	Average Age at Onset, Years	Infectious Valvulitis No.	Infectious Valvulitis Per Cent.	Doubtful No.	Doubtful Per Cent.	Arteriosclerotic No.	Arteriosclerotic Per Cent.	Normal No.	Normal Per Cent.
Hypertrophic	54	38.8	11	20.4	5	9.3	15	27.8	23	42.6
Atrophic.....	26	35.5	3	11.4	6	23.1	6	23.1	11	42.3

an acute or subacute onset or course, or a hypertrophic type of lesions, stands in a causal relationship to infectious valvular disease. The fact is rather that all of these manifestations are more common in the younger age groups, and will therefore often be found in the same patient. Conversely, since an acute or subacute onset or course is less frequent in older persons, it will occur less often in patients with arteriosclerotic valvular disease. The duration of the illness is of no influence on the character of the heart lesions. Sex plays no apparent rôle in the distribution of the lesions. In the whole series there were twenty-four males and fifty-six females. Of the cases with infectious valvular disease there are five males and nine females and of those with arteriosclerotic heart disease there are seven males and fourteen females.

It appears from the cases that we have studied that no particular form of chronic arthritis is constantly associated with a particular type of cardiac defect, and that, therefore, the cases cannot be grouped into different forms of chronic multiple arthritis, with corresponding cardiac defects. It is true that those patients in whom the onset of the illness was acute or subacute more frequently exhibited infectious valvular disease. However, these patients on the average were considerably younger than those in whom the onset was insidious. The influence of age on the character of the heart lesion is brought out strikingly in Table 1. The average age at the onset of the arthritis of those with infectious valvular disease was 28 years, and of those with arteriosclerotic cardiopathies, 54.5 years.

It is a well known clinical observation that the heart valves are more prone to infection in younger persons. This is shown clearly in the age incidence of rheumatic heart disease. About 80 per cent. of children with acute rheumatic fever develop endocarditis, while in

TABLE 6.—*Classification According to Nature of Heart Lesion*

	Number of Cases	Acute or Subacute Onset No.	Acute or Subacute Onset %	Insidious Onset No.	Insidious Onset %	Acute or Subacute Course No.	Acute or Subacute Course %	Chronic Course No.	Chronic Course %	Hypertrophic Lesions No.	Hypertrophic Lesions %	Atrophic Lesions No.	Atrophic Lesions %
Infectious valvulitis.....	14	11	79	3	22	6	43	8	57	11	79	3	22
Arteriosclerotic	21	9	43	12	57	6	29	15	71	15	71	6	29
Doubtful.....	11	10	91	1	9	5	45	6	55	5	45	6	55
Normal.....	34	23	68	11	32	10	29	24	71	23	68	11	32
Total.....	80	53	66	27	34	27	34	53	66	54	68	26	32
Ages 40 and under at onset...	50	36	72	14	28	18	36	32	64	32	64	18	36

adults this complication appears in less than 50 per cent. of the cases. The older the person, the greater the probability that the heart will be spared. We believe that the evidence is insufficient to warrant the conclusion that the causative agent of arthritis deformans is essentially different at different periods of life, but that the greater incidence of infectious valvular disease in the younger age groups is due to the greater vulnerability of these hearts to infection.

The cause for the great frequency of arteriosclerotic lesions in the hearts of older patients with chronic multiple arthritis remains obscure. It is thought by many authors that infections play an important rôle in the etiology of arteriosclerosis. It is conceivable, but not proved, that a long drawn out infection may cause early atheromatous degeneration of the arteries and valves.

We have found that it is the rule for the heart disease to pursue a symptomless course in these patients. Indeed, in spite of the advanced nature of the valvular lesion, the patient is usually unaware that he has a cardiac defect. This is undoubtedly due to the fact that the enforced rest imposed on the patient by his joint disease spares the heart, by eliminating the necessity for the circulatory responses and adjustments that are ordinarily called forth by even moderate physical exertion. This is analogous to the condition that obtains in patients with hemiplegia. We have observed that patients with hemiplegia, in spite of the presence of

marked hypertension and cardiac hypertrophy, are rarely distressed by cardiac symptoms, unless there is accompanying coronary artery disease. Here, too, the enforced physical idleness relieves the heart of the necessity for constant adaptation called forth by the physical exertion of every-day life.

Probably dependent on the same factor is the fact that cardiac enlargement in patients with chronic multiple arthritis and valvular disease is often less marked than one would ordinarily expect to find it in patients with advanced valvular lesions.

SUMMARY

About 45 per cent. of all patients with chronic multiple arthritis present organic lesions of the heart. Valvular disease, the result of an endocarditis, was found in 17. 5 per cent., and in 28 per cent. of those who were under 40 at the onset of their arthritis; heart disease due to arteriosclerosis of the valves or to hypertension in 26 per cent., and in 4 per cent. of those who were under 40 when the disease began. Of those over 40 at the commencement of their illness, none had endocarditic lesions, and 63 per cent. had arteriosclerotic heart disease. The age distribution of the heart lesions is probably explained by the greater susceptibility to infection of the heart valves in younger persons. These observations give added support to the theory that chronic multiple arthritis (arthritis deformans) is caused by an infectious agent.

IMMUNIZATION OF CHILDREN AGAINST FLEXNER DYSENTERY

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AND
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In spite of all the precautionary methods, it is difficult to prevent the spread of bacillary dysentery in institutions for young children. If immunity to this disease could be produced, a material reduction in the morbidity and mortality of such institutions during the summer months would result.

Many workers [1] have shown by experiments on animals and men that protection against dysentery can be conferred by the use of vaccines. Shiga,[2] Gibson,[3] Vincent [4] and Csernel [5] have been successful by the subcutaneous administration of vaccines in lowering materially the incidence and mortality of the disease in certain epidemics. Their results indicate that protection is not conferred by dysentery vaccines in all cases. Among a large group of inoculated persons there are always certain ones who never develop immune bodies. From five days to three weeks must elapse before agglutinins are produced in most instances. The duration of the immunity is probably only from two to six months.

More recently, the oral administration of polyvalent vaccines was employed by Gauthier [6] in his campaign against dysentery among the Greek refugees. As far as he was able to ascertain, no infection occurred among the 29,880 persons thus vaccinated, although the disease continued to prevail among unvaccinated groups. Agglutinins in high titer were found in the serum of those who had ingested the vaccine. At the time that we undertook the work which we are now reporting, we were not acquainted with the work of Gauthier. Our vaccine was administered by the subcutaneous route. We hope, however, in the future to have the opportunity of testing the efficiency of dysentery vaccine when administered by mouth.

Most of the previous work has been an attempt to protect individuals from Shiga as well as Flexner dysentery. The Shiga bacillus is responsible for many of the severe infections among adults. Accordingly, polyvalent vaccines, including the Shiga type of *Bacillus dysenteriae*, have been employed. Since the Shiga vaccines are highly toxic when given subcutaneously, it has been necessary to add antidysentery serum to them or to employ specially modified vaccines. On the other hand, in children at least 80 per cent. of the infections are due to the organisms of the Flexner group. In most instances, therefore, it would be sufficient to protect children from Flexner dysentery only. Furthermore, in a children's institution in which dysentery is endemic, the prevailing strain of organism can be cultivated and a vaccine prepared from the specific organism isolated. Because of the low toxicity of Flexner vaccines, a simple killed saline suspension can be used without the addition of immune serum. Lucas and Amoss [7] have reported the use of a Flexner vaccine-serum mixture among children. The conditions were such that no definite conclusions could be drawn as to its efficiency in conferring protection.

REPORT ON THE USE OF DYSENTERY VACCINE IN A CHILDREN'S INSTITUTION

We had occasion, in the summer of 1923, to employ a vaccine to combat an outbreak of dysentery in an institution that cared for children between the ages of 6 months and 8 years. The population averaged from seventy to ninety children, of whom approximately 50 per cent. were under 4 years of age. Dysentery had been present during the previous summers. It was probable that there were in the institution a number of carriers of the organisms. Sanitary conditions and the care of the children were such as to afford ample facilities for the dissemination of the bacilli from any carriers.

When we assumed medical charge of the institution, June 1, two of the infants in the nursery were found to be suffering from typical dysentery. *Bacillus dysenteriae* (Flexner) was isolated from the stools of one of

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2. Shiga, K.: Ueber die Priorität der Entdeckung des Ruhrbacillus und der Serumtherapie bei der Dysenterie, Deutsch. med. Wchnschr. **29**: 113-115, 1903.

3. Gibson, H. G.: Results Obtained from the Use of Anti-Dysenteric Sero-Vaccine in the Field, with Regard to the Reduction of Case Incidence, J. Roy. Army M. Corps, London **30**: 476-485, 1918.

4. Vincent, H.: Sur la vaccination de l'homme contre la dysenterie bacillaire, Compt. rend. Soc. de biol. **85**: 965-967, 1921.

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6. Gauthier, A.: Essais de vaccinations et de vaccinotherapie par la voie buccale contre la dysenterie bacillaire, Bull. de l'Acad. de méd. **91**: 69-84 (Jan. 15) 1924.

7. Lucas, W. P., and Amoss, H. L.: Vaccine Treatment in the Prevention of Dysentery in Infants, J. Exper. Med. **13**: 486-494, 1911.

these infants. The two patients were immediately removed from the nursery to a distant wing of the building. A rigid quarantine was instituted, and all the usual methods of isolation were employed. In spite of this, new cases of dysentery soon began to appear. Table 1 gives a list of the cases in the order of their incidence, and shows the location of the child at the time of the onset.

TABLE 1.—*Incidence of Dysentery During the Summer of 1923*

Case No.	Name and Age	Date of Onset	Location	Character of Stool*	Stool Culture	Outcome
1	R. B. 7 mo.	Not known prior to June 1	Nursery	M.	Negative	Died, July 6
2	F. T. 2 yr.	Not known prior to June 1	Nursery	M.	Flexner	Recovered
3	R. S. 3 yr.	June 13	Convalescent measles ward	M. and B.	Negative	Recovered
4	F. F. 1 yr.	June 26	Nursery	P. and M.	Flexner	Died, July 12
5	A. B. 1 yr.	June 27	Nursery	M. P. B.	Flexner	Died, July 19
6	R. U. 14 mo.	July 15	Nursery	P. and M.	Negative	Died, July 24
7	L. L. 17 mo.	July 20	Nursery	P. M. B.	Flexner	Removed in critical condition
8	J. C. 4 yr.	Aug. 1	Dormitory	B. and M.	Negative	Recovered
9	E. T. 18 mo.	Aug. 3	Dormitory	B. P. M.	Flexner	Recovered
10	A. C. 2 yr.	Aug. 3	Dormitory	B. P. M.	Flexner	Died, Aug. 15
		Vaccine administered, August 5				
11†	B. R. 16 mo.	Oct. 10	Nursery	M.	Negative	Recovered

* M. indicates the presence of mucus; P., pus; B., blood.
† This was the mildest infection of the series. Improvement began on the fifth day. This patient had received vaccine nine weeks previously, but had developed no agglutinins.

It will be noted that prior to the general administration of vaccine, August 5, ten typical cases of dysentery had developed. The disease occurred not only among the infants in the nursery but also among the older children in other parts of the institution. In addition to these patients, in whom the diagnosis was unmistakable, there were other children who suffered from mild attacks of diarrhea which could not be diagnosed as dysentery on either clinical or bacteriologic grounds. They were temporarily isolated in a separate

TABLE 2.—*Number of Children Inoculated*

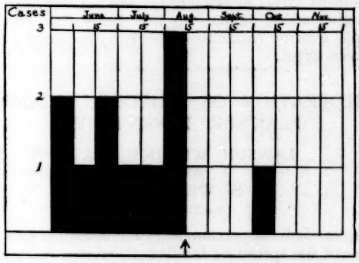
Date Begun	2 Years and Under	2 to 4 Years	Over 4 Years	Total Children	General Reactions
August 5	11	20	21	52	0
August 28	3	2	0	5	0
August 31	0	0	1	1	0
September 14	2	0	0	2	2
September 29	4	2	1	7	0
October 3	2	0	0	2	0
October 6	1	0	0	1	0
	23	24	23	70	2

observation ward. It is quite possible that some of them were suffering from mild attacks of dysentery, and that they later served as a further source of the spread of the disease.

By the first week of August, as the usual methods of controlling the disease had failed, we determined to attempt to immunize all the children by means of a vaccine. The organisms isolated from six different patients were all of the Flexner variety. Although we did not determine the serologic subgroup to which each strain belonged, it seemed logical to make the vaccine from one strain, since it has been shown that there is a strong cross agglutination and cross protection among all the members of the Flexner group.

The vaccine was prepared from the organism isolated from Case 4. The bacilli were grown for eighteen hours on agar slants, and a suspension of one billion bacilli in 1 c.c. was made with physiologic sodium chlorid solution containing 0.25 per cent. phenol (carbolic acid). The organisms were killed by heating for one hour at 60 C. Because of the low toxicity of the Flexner organism, it was considered unnecessary to add antidysentery serum. Three doses of, respectively, 250, 500 and 1,000 million were given subcutaneously at intervals of three days. All the children in the institution were inoculated between August 5 and August 14. From that time on, new children were vaccinated as soon after admission as possible. A record of the inoculations, together with the age groups of the children, is given in Table 2.

Prior to vaccination, not a fortnight had passed without the development of new cases of dysentery. After vaccination was employed, the disease disappeared entirely for more than two months. October 10, a mild case of dysentery occurred, but no others were encountered up to December 1, when we left the institution. These results are graphically illustrated in the accompanying chart.



Incidence of dysentery in two-week periods. Arrow shows when vaccine was administered.

On careful consideration, we are unable to account for the abrupt termination of the epidemic of dysentery on any other ground than that protection had been conferred by means of the vaccine. The summer dysentery season in Baltimore was scarcely half over. The same unhygienic conditions under which dysentery developed still existed. The attempts at control had been in operation for two months without any favorable results. The disease had not exhausted its field in the institution, as there were still many children who never had had dysentery. In the two months following the adoption of vaccination, eighteen new children were admitted directly into the nursery and other parts of the institution in which dysentery had prevailed, and yet none of them contracted the disease.

REACTIONS

A total of seventy children received inoculations. Of these only two had any general reaction. One of these was an infant of 10 months who received the first dose of 250 million, September 14. Three hours later, the rectal temperature rose to 103 F. and the baby had a convulsion. He was removed from the institution the same afternoon, but was reported to be entirely well the following day. The other infant was 15 months old, and received the same dose on the same day. His temperature rose to 101.6 F. a few hours later, and he

became very irritable but had no convulsion. The temperature was normal and he seemed entirely well the next morning. The vaccine that was administered in these two instances was from the original lot prepared seven weeks previously. We learned, subsequently, that for a time it had not been kept on ice. After these reactions, this lot of vaccine was discarded, and a fresh vaccine was prepared from the same strain.

TABLE 3.—*Agglutination Titers, September 26*

No.	Name	Age	Doses of Vaccine	Time Since Last Dose	Agglutination Dilution 1:20	1:50	1:100	Remarks
1	R. M.	6 yr.	3	6 weeks	+	±	0	Did not have dysentery
2	M. B.	22 mo.	3	3 weeks	+	0	0	Did not have dysentery
3	K. S.	7 yr.	3	6 weeks	++	++	+	Did not have dysentery
4	C. F.	5 yr.	3	6 weeks	+	0	0	Did not have dysentery
5	N. P.	8 yr.	3	6 weeks	++	+	0	Did not have dysentery
6	R. M.	6 yr.	3	6 weeks	+	0	0	Did not have dysentery
7	H. B.	8 yr.	3	6 weeks	++	0	0	Did not have dysentery
8	F. T.	26 mo.	1	7 weeks	+	0	0	Convalescent from dysentery
9	E. T.	20 mo.	1	7 weeks	++	+	0	Convalescent from dysentery
10	B. R.	16 mo.	3	6 weeks	?	0	0	Developed dysentery 2 wk. later
11	D. S.	14 mo.	0	.....	?	0	0	Was not vaccinated

No other general reactions were encountered. We are inclined to attribute these two untoward reactions to the age of the vaccine, and to the fact that it had not been properly kept.

Most of the children had a slight local reaction, consisting of an area of redness from 1 to 2 cm. in diameter at the site of the inoculation, which lasted one or two days. Occasionally, the area reached 5 cm. in diameter. There was very little induration. The arms seemed slightly tender, but not sufficiently so to prevent the older children from playing as usual. In many of the children, not even this slight local reaction was noted.

AGGLUTINATIONS

The agglutination titers of the blood serum of eleven children were determined. The serum was tested against the vaccine (prepared from the organism of Case 4), and also against the organisms isolated from Cases 9 and 10 (Table 1). In each instance, the agglutination titer was the same for all three of these organisms. The results are shown in Table 3.

Cases 1 to 7 were children who had received three doses of vaccine and, to our knowledge, never had had dysentery. They all had definite agglutinins in a dilution of 1:20, and several had agglutinins in higher titer. These titers, however, were not so high as those which have been reported in adults who had been inoculated with polyvalent vaccines. Case 8 and Case 9 were children who were convalescing from dysentery, and had received one dose of vaccine during the course of the disease. They, likewise, had definite agglutinins in their serum. Case 10 was the only child who developed dysentery after having received the vaccine. September 26, her serum did not agglutinate at a dilution of 1/20. Two weeks later, she contracted the disease. Case 11, an unvaccinated control, had no agglutinins.

SUMMARY

1. Seventy children in an institution in which Flexner dysentery was endemic were inoculated with a monovalent Flexner vaccine made from a strain isolated from one of the patients. Three doses of 250, 500 and 1,000 million, respectively, were given subcutaneously.

2. Among the seventy children, only two had general reactions. These reactions can be attributed to the improper preservation of the vaccine. Local reactions were mild.

3. In the two months prior to vaccination, ten cases of dysentery had occurred and the usual methods of control had failed to prevent the spread of the disease. After vaccination, only one child developed dysentery.

4. The vaccine had not produced agglutinins in the serum of the one child who contracted dysentery after inoculation. The other children, whom we tested six weeks after vaccination, had definite agglutinins.

CONCLUSIONS

Definite conclusions in regard to the value of vaccine in controlling epidemics of Flexner dysentery among children cannot be drawn from a single series of inoculations, but we believe that our results are sufficiently encouraging to warrant further attempts of this kind. We hope later to compare the value of dysentery vaccine when administered by mouth.

1014 St. Paul Street.

HOOKWORM INFECTION RATES IN ELEVEN SOUTHERN STATES

AS REVEALED BY RESURVEYS IN 1920-1923

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During the years 1910-1915, hookworm campaigns were conducted by state boards of health in eleven Southern states.[1] It was early recognized that the highest infection rate was found among rural school children between 6 and 18 years of age, and consequently special figures were collected for these ages in 422 counties. The infection rates in these original (1910-1915) campaigns were based on microscopic examinations of fecal specimens by the plain smear method from a minimum of 200 rural school children in each county.

Results of 1923 Survey

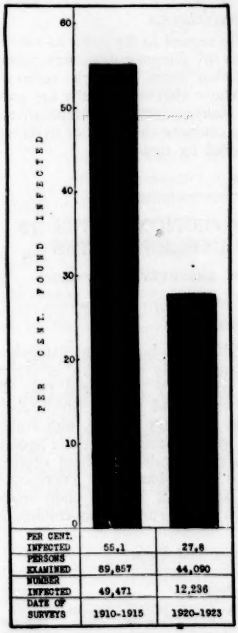
State	Number of Counties	Number of Reexaminations	Number Infected	Infection Rate	Original Infection Rate, 1910-1915
Alabama	3	1,449	386	26.6	43.4
Georgia	4	2,296	1,106	48.2	79.4
North Carolina	2	1,016	236	23.2	75.5
South Carolina	3	1,707	218	12.8	51.4
Virginia	4	2,130	112	5.3	49.5
Total	16	8,598	2,058	23.9	59.2

In order to determine the rates of infection after a period of years, eighty-one of the 422 counties have been resurveyed during the years 1920-1923, the same microscopic technic being used as in the original surveys. More accurate methods of microscopic examination have been developed since the first surveys were made, but for the sake of comparison the plain smear method has been employed in all resurvey work. In the resurveys, a minimum of 500 rural school children from 6 to 18 years of age have been examined in each county.

In the original surveys of these eighty-one counties, 89,857 rural school children were examined, of whom

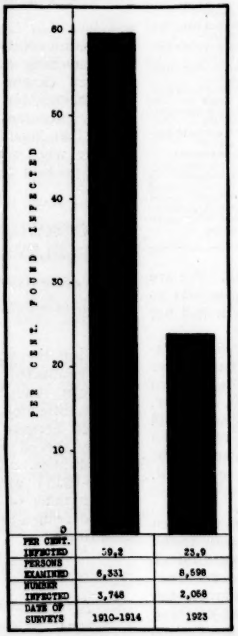
1. Virginia, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Louisiana, Texas, Arkansas, Tennessee and Kentucky.

49,471 were infected, giving a rate of 55.1 per cent. In the 1920-1923 surveys, 44,090 children were examined, of whom 12,236 were infected, giving a rate of 27.8 per cent.; a reduction since 1910-1915 of 49.5 per cent. (Chart 1). While this decrease in the rate of infection is gratifying, it should be pointed out that the actual reduction in the severity of the disease is probably much greater. A rate of infection is not an accurate measure of the severity of the disease; it merely shows the proportion of the population harboring hookworms. In areas where worm counts have been made it has been found that, while the treatment campaign has reduced the rate of infection to some extent, the average number of worms harbored by those still infected is very much smaller. It is reasonable to assume that a large part of the 27.8 per cent. of school children showing positive stools at the time of the resurveys were very lightly infected.



PER CENT. INFECTED	55.1	27.8
PERSONS EXAMINED	89,857	44,090
NUMBER INFECTED	49,471	12,236
DATE OF SURVEYS	1910-1915	1920-1923

Chart 1.—Infection rates in eighty-one counties in eleven states resurveyed in 1920-1923.



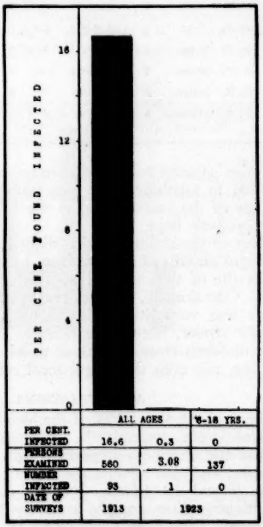
PER CENT. INFECTED	59.2	23.9
PERSONS EXAMINED	6,331	8,598
NUMBER INFECTED	3,748	2,058
DATE OF SURVEYS	1910-1914	1923

Chart 2.—Infection rates in sixteen counties in five states resurveyed in 1923.

Of the eighty-one counties mentioned above, sixteen in five states, Virginia, North Carolina, South Carolina, Georgia and Alabama, were resurveyed during 1923. In the original survey of these sixteen counties, 3,748 children of the 6,331 examined were infected, giving a rate of 59.2 per cent. In the 1923 resurveys, 2,058 were positive out of the 8,598 examined, giving a rate of 23.9 per cent., or a reduction since the original surveys of 59.6 per cent. (Chart 2).

The findings in the accompanying table indicate that hookworm infection has been greatly reduced. No particular activity can be named as the principal cause of the reduction, but the large number of treatments given during the original campaigns, the educational work in sanitation done then and since, and the service rendered in recent years by health officers, nurses and inspectors, are important factors. In some sections, however, hookworm disease is still a serious problem.

An interesting side-light in connection with hookworm disease is shown in the findings at Knotts Island, a remote fishing district on the North Carolina coast. In 1913, 560 of the 567 inhabitants were examined, and ninety-three, or 16.6 per cent., were found infected, all of whom were treated until negative stools were reported. In 1923, 308 of the estimated population of 475 were examined and one found positive, giving an infection rate of 0.3 per cent. No ova were found in the feces of the 137 school children examined. It appears, therefore, that thorough treatment is an effective aid in controlling the spread of hookworm disease. This is especially important in communities where, for any reason, the control of soil pollution cannot be attempted (Chart 3).



	ALL AGES		5-18 YRS.
PER CENT. INFECTED	16.6	0.3	0
PERSONS EXAMINED	560	3.08	137
NUMBER INFECTED	93	1	0
DATE OF SURVEYS	1913	1923	

Chart 3.—Infection rates in Knotts Island, N. C., in 1913 and 1923.

Tuberculosis Notifiable in England and Wales.—Compulsory notification of tuberculosis in England and Wales requires the registration of both the pulmonary and nonpulmonary forms of the disease. In 1922, out of the total primary notifications of 69,259 cases of tuberculosis, 53,422 were of the pulmonary and 15,837 of the nonpulmonary type. These figures of recognized tuberculosis cases in England indicate a morbidity rate for the disease of 183 per hundred thousand population during 1922.—Drolet, G. J.: *Am. Rev. Tuberc.* **8**:397 (Jan.) 1924.

THE POTENTIAL DANGERS ATTENDANT ON ETHYLENE-OXYGEN ANESTHESIA*

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In the absence of precise data, it has been estimated that ethylene-oxygen anesthesia has been employed in some 50,000 operations. Up to the present, no contraindications to its use have been noted. It has been employed successfully and without deleterious effects not only as an anesthetic agent in all types of general surgery on otherwise healthy subjects,[1] but also in cachectic infants [2] as well as in the aged with marked pulmonary cardiac, vascular and renal pathologic conditions.[3] A favorable report on its use in gynecology and obstetrics is to be published,[4] and within the last month an article was published on its very satisfactory use in exodontia.[5] Its safety and superiority over nitrous oxid have recently been confirmed by several French investigators.[6] Recently, data were published which prove conclusively that ethylene oxygen anesthesia does not influence "the blood reaction so markedly or so rapidly as does ether or chloroform." [7]

In all our published articles, on the other hand, we have called attention in no uncertain terms to the one serious disadvantage of this anesthetic agent; namely, to its inflammability and explosibility.[8] The fact that ethylene with oxygen gas (or air) in the proper concentration forms a highly explosive mixture precludes its use in the presence of a free flame, thermocautery, or sources of electrical discharges (in the roentgen-ray room or in the presence of an exposed induction coil). This constitutes one of the limitations of ether anesthesia also; and we are quite certain that an ethylene-oxygen mixture is no more dangerous than an ether-oxygen mixture. Parenthetically, it might be pointed out at this point that, contrary to common belief, a nitrous oxid-oxygen mixture may be ignited with an ensuing explosion by means of a thermocautery.[9]

In a recent article, Brown [10] considers the "four places in which ethylene might conceivably explode." He promptly and quite properly excludes as possibilities the explosions of the tanks of pure compressed ethylene as well as the explosibility of pure ethylene itself. In confirmation of previous work, he finds that the ethylene-oxygen mixtures, most commonly used in anesthesia, are too "rich" and, therefore, non-explosive when subjected to a possible ignition by an electric spark. His calculations on the length of time of continuous anesthesia necessary to fill a small and badly ventilated operating room with a minimum explosive mixture are quite convincing, since some direct experiments [11] failed to reveal detectable traces of ethylene after one and one-half hours' continuous administration of the gas (with oxygen) in a fairly well ventilated operating room.

Such calculations and experiments do not justify, however, the use of the cautery or free flame near the field of operation; for, in the immediate proximity of the patient and even at some distance from the table, the "rich" and nonexplosive mixture exhaled by the patient may have experienced just the proper dilution with air to be most explosive. Similar considerations apply to ether-oxygen or ether-air mixtures as commonly employed.

There remains for consideration, as far as we know, the final possibility of explosion, namely, the ignition by a static spark of the ethylene-oxygen mixture in the tubing conducting these gases to the mask. On this point, I [12] wrote:

> The possible development of static electricity as the result of the long continued flow of an ethylene-oxygen mixture through the rubber tubing leading to the mask and the sudden ignition of this mixture by a jump spark suggests that there should be an uninterrupted metallic connection from the tank to the face mask and that the tank itself be grounded. Ether-oxygen mixtures administered through insulated rubber tubing have been known to explode with serious violence as the result of a jump spark. Although the instances are rare, every precaution should be taken to avoid their occurrence by the method suggested above. The same precautions apply for the administration of ethylene-oxygen, and should be taken before some serious accident occurs. These potential dangers of ethylene-oxygen anesthesia have been exaggerated, unfortunately, by some and minimized by others.

Brown considers this possibility, but dismisses it finally as an improbability; for he writes, "Such static sparks are rarely of the duration or intensity of those used in testing the explosibility in the experiments reported in the tables, and are hardly likley to produce an explosion."

When I first approached the physicists and chemists several months ago, the theoretical possibility was readily granted but the improbability was emphasized. Subsequent *facts* nullified all *opinions*. The danger is not a theoretical one. Within the last six months, a static spark, arising as indicated above, has to my knowledge twice ignited an ethylene-oxygen mixture with explosive violence, tearing wide open the rubber tubing leading the ethylene-oxygen mixture from the mixing chamber to the mask. Fortunately, both accidents had no serious consequences to the patient, operator or anesthetist; in one instance, the explosion happened just at the conclusion of a prolonged period of anesthesia; in the other, just as the mask was about to be applied to the patient's face. I hasten to add that this potential danger (even if it occurs infrequently) applies equally well to the administration of ether-oxygen or nitrous oxid-ether-oxygen mixtures through the usual type of nitrous oxid-oxygen or combined nitrous oxid-ether-oxygen apparatus. I know of two accidents of this sort.

Because of these facts, I feel the responsibility of frankly calling the attention of the medical profession to this danger (also present in the similar administration of ether-oxygen or nitrous oxid-ether-oxygen anesthesia). The danger can be eliminated by the manufacturers of the various types of gas apparatus by

* From the Hull Physiological Laboratory of the University of Chicago.

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11. Luckhardt and Lewis (Footnote 1).
12. Luckhardt, A. B.: Ethylene Anesthesia, in Gwathmey's book on Anesthesia, to be published.

providing their respective machines with flexible metallic tubing. It is particularly important that the tubing conducting the mixed gases (or conducting the ether vapor with or without the nitrous oxid and oxygen) be made of metal, so that there may be direct metallic contact from the mask to the gas machine. If metal tubing connects the gas machine with the tank, and if the tank itself is grounded by means of a conductor, such as a wire attached to a radiator or a water pipe, the last step of known and effective precaution will have been taken. In case conductile rubber tubing can be manufactured, this type of tubing may possibly be preferable to flexible metal tubing, or a closely wound spiral coil of wire may be placed inside the ordinary tubing. The rubber or celluloid mask is less likely to be a source of danger, since expired air is saturated with water moisture, and conduction of the current to the metallic parts is more likely. If the inner surface of the mask were lined with a wire gauze which, in turn, was in contact with the metallic tube conducting the gas mixture to the mask, all possible sources of danger would be eliminated.

Although this advice was first prompted in an endeavor to save ethylene as a meritorious anesthetic agent, the same potential danger applies to the administration of ether-oxygen alone or in combination with nitrous oxid by means of any of the usual types of so-called gas-oxygen apparatus. It therefore behooves the manufacturers of these apparatus to equip their machines so that the lives of those who must use them as well as the lives on whom they must be used are not jeopardized.

THE VALUE OF MILK ACIDIFIED WITH LEMON JUICE

ITS COMBINATION WITH EGG YOLK TO ADD THE ANTIRACHITIC FACTOR

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AND
MILTON J. MATZNER, B.S.
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As is well known, laymen have a strong prejudice against giving orange juice and milk at the same meal. Physicians, including children's specialists, have encouraged this point of view, directing that the daily quota of orange juice be given at a time removed as far as possible from the milk feeding; the usual hour is 8 o'clock in the morning. Somewhat over a year ago, we began to add fruit juices directly to the milk formulas, instead of giving them to the infants separately and between feedings. Our object in diverging from this practice was twofold—to simplify the technic of feeding, and to render the milk more acid.

It was shown convincingly by Clark, ten years ago,[1] that although cow's milk is more acid than breast milk as judged by its hydrogen-ion content, it is intrinsically less acid, owing to the fact that it contains buffer constituents in much higher concentration. It seems unnecessary to review the data on which this statement is founded, as it has been recently clearly expounded by Marriott,[2] as well as by Faber,[3] whose work was based on the property of cow's milk to bind large amounts of acid.

Chart 1, reproduced from a similar graph of Clark, clearly illustrates the interaction of milk and hydrochloric acid, and shows how much larger an amount of the acid is required to increase the acidity of cow's milk than of breast milk, and how much more of it is rendered inactive. These curves portray the course of digestion in the infant's stomach, as far as proteins are concerned, when cow's milk or human milk is fed.

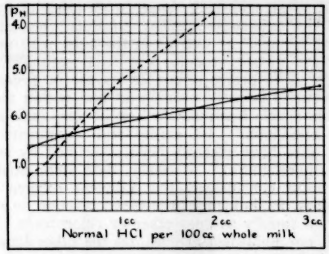

Chart 1.—Hydrogen-ion concentration of human (broken line) and cow's milk (solid line) titrated with hydrochloric acid.

Our first tests were carried out with tomato juice, which, as we have shown, is an excellent antiscorbutic food and one well adapted to infant feeding. In the ratio of one ounce to the quart, canned tomato juice may readily be added to milk without bringing about curdling; in fact, it may be added with impunity in at least twice this amount. A mixture of milk and tomato juice was successfully fed to infants. This preparation was gradually supplanted, however, by a formula in which orange juice was substituted for the tomato, which, although fulfilling its object in regard to providing adequate antiscorbutic vitamin, was found to be insufficient in regard to its acidity; except in very large amounts, it cannot adequately increase the hydrogen-ion concentration of the milk. The p_H of tomato juice is about 4.2, whereas that of orange juice was found to be from 3.54 to 3.71. This combination of foods, likewise, was well borne by the infants, but it failed to counteract sufficiently the buffer action of the protein and the salts of the milk.

Chart 2 clearly brings out this relationship. It shows the alteration in the p_H of cow's milk, as determined by the electrometric method, brought about by additions of varying quantities of orange juice. It will be noted that the addition of 28 c.c., or about 1 ounce, of orange juice to the liter of milk, changed the p_H merely from 6.52 to 6.34, and that it required over 200 c.c. of orange juice to bring it to a p_H of 5.49. It was evident that it lay outside the realm of dietetics to attempt to overcome the buffer action of cow's milk by means of a food of such low acidity. Our first thought was to enhance the acidity by adding normal hydrochloric acid, as well as orange juice, to the milk. A series of tests showed that the p_H can be changed from 6.53 to 5.39 by adding 56 c.c. (about 2 ounces) of orange juice together with 21 c.c. of normal hydrochloric acid. This method of feeding was not adopted, however, as it seemed too cumbersome. We resorted instead to the use of lemon juice, which has a p_H of about 2.12 and contains from 6 to 7 per cent. of citric acid. Titration showed it to be

1. Clark, W. M.: The Reaction of Cow's Milk Modified for Infant Feeding, J. M. Res. **31**: 431, 1914.
2. Marriott, W. M., and Davidson, L. T.: The Acidity of the Gastric Contents of Infants, Am. J. Dis. Child. **26**: 542 (Dec.) 1923.
3. Faber, H. K.: Hydrochloric Acid in Infant Feeding, Am. J. Dis. Child. **26**: 401 (Nov.) 1923.

even stronger than normal hydrochloric acid, 1 c.c. of lemon juice being equivalent to 1.25 c.c. of a normal hydrochloric acid solution. Its effect in overcoming buffer action is shown in Chart 2; the additions of 21 c.c. per liter of cow's milk altered the p_H from 6.64 to 5.54, and 28 c.c. reduced it to p_H 5.35. These determinations were carried out with raw cow's milk, but it was found that heated or pasteurized milk gave practically the same results. McClendon and Sharp [4] have shown, likewise, that the p_H of orange juice or of lemon juice is not altered by boiling.

In preparing the milk mixture, the lemon juice was added to the water or other diluent, and this in turn was added to the milk. If undiluted milk was used, the lemon juice was introduced drop by drop, and the mixture was stirred as this was done. As has been stated, this resulted in a p_H of about 5.54 for whole milk; when milk formed only two thirds of the formula, the remainder being composed of water and sugar, a slightly higher acidity (p_H 5.30) was brought about. The standard formula was: milk, 24 ounces (710 c.c.); water, 12 ounces (355 c.c.); sucrose, one-half ounce (15 gm.); lemon juice, 21 c.c.

The lemon juice occasions but little change in the flavor of milk, giving it a very slightly acid flavor, which is pleasant and barely detectable. About twenty-five babies were given milk containing lemon juice, and many more formulas prepared with orange juice. In no instance did the change from nonacidified milk lead to a refusal of the food, or bring about any digestive disturbance. The stools were not characteristic in color or consistency, nor was the urine rendered alkaline. The gastric curd was softer and more friable than that of milk mixtures prepared in the usual way. Regarding the gains in weight, it may be stated, in general, that no difference was noted from the preceding period when the lemon juice had not been added to the milk. Babies

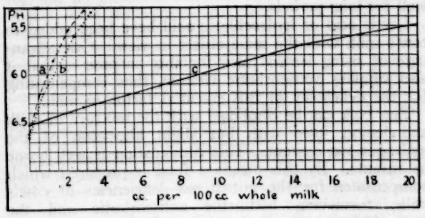

Chart 2.—Relative hydrogen-ion concentration of milk to which (*a*) lemon juice, (*b*) normal hydrochloric acid or (*c*) orange juice was added.

fed with this mixture gained steadily, unless they contracted one of the infections that are so common and so disturbing during the winter.

The infants varied in age from 2 to 15 months, and were all in one ward where they could be carefully supervised and observed.[5] Many were fed the milk mixtures containing orange juice or lemon juice for periods of from three to six months without the occurrence of any sign or symptom that made it advisable to change the formula. At 3 months of age, a mixture was fed composed of two-thirds milk, one-third water, lemon juice added in the ratio of approximately 21 c.c. to the quart (liter), and 1.5 per cent. of sucrose. Feedings were given at four hour intervals in the usual amounts. Cereal and vegetables were introduced at about 6 months. In other words, there has been no deviation in the general technic of infant feeding from that which has been carried out for many years in this institution, except for the incorporation of the orange or lemon juice in the milk.

In view of the fact that various forms of acid milk have long since been regarded as being readily digested by infants, it seems remarkable that pediatricians have continued to issue instructions that orange juice and milk should never be given at the same time, but should be spaced as far apart as possible. Buttermilk has been used in infant feeding, in one form or another, for many generations. Recently Marriott [2] has urged the use of lactic acid milk as a routine food for infants, especially for those suffering from infections or from nutritional disturbances, in whom the acidity of the gastric contents is lower than normal. Scheer [6] has urged the use of hydrochloric acid milk for the treatment of tetany, and Faber [3] states that such milk is a valuable food for normal infants and possesses advantages over bacterially soured milk. The relative merits of various acid milk preparations will have to be determined by clinical experience, and cannot be appraised by a theoretical consideration of their action within the gastro-intestinal tract. That acid milk is well borne by infants is no longer open to question. Finkelstein's protein milk, which, in our experience, has proved a veritable boon in the feeding of atrophic infants, has a p_H as low as 4.53.

We have no means of determining what is the optimal p_H of cow's milk, or to what extent its buffer action should be counteracted outside the body by an addition of acid. How far should we forestall the normal function of the hydrochloric acid of the stomach? In the course of digestion, the gastric contents usually attain an acidity of between p_H 5.0 and 4.0.[7] As stated, the acidity of cow's milk was increased to a p_H of about 5.54 by the addition of approximately 21 c.c. of lemon juice per liter. Possibly, it is advisable to add still more of this acid fruit juice, and bring the acidity down to the level of buttermilk or of lactic acid milk; if so, this can readily be carried out without causing curdling of the milk. Only prolonged clinical experience will afford an answer to this question. Nor are there experimental data on which to base a judgment as to whether lactic acid or citric acid is the preferable agent for this purpose.

An interesting study bearing on this subject, but one that is not strictly apposite on account of the large amounts of acid substances which were fed, is that of Blatherwick and Long,[8] on the effects of drinking large amounts of orange juice and sour milk. They found that "it was impossible to overreach the organism's ability to oxidize the contained citric acid, even though the amounts drunk in one day were the equivalent of about 48 gm. of acid." The drinking of large amounts of lactic acid milk caused the formation of strongly acid

4. McClendon, J. F., and Sharp, P. F.: The Hydrogen-Ion Concentration of Foods, J. Biol. Chem. **38**: 535 (July) 1919.

5. Another advantage in placing the infants all together was that the giving of orange could be entirely omitted in this ward, which effected a saving of considerable time for the nurses.

6. Scheer, K.: Die Beeinflussbarkeit der Spasmophilie durch Salzäuremilch, Jahrb. f. Kinderh. **97**: 130 (Feb.) 1922.

7. This refers to the tests of stomach contents at the height of digestion, from one and one-half to two hours after the food has been given. Tests made previous to this interval show a lower degree of acidity, and also that some of the milk has left the stomach. Moreover, it has been frequently demonstrated that a certain amount of human and cow's milk leaves the stomach and enters the duodenum almost immediately after it is taken. These phenomena would suggest that it may not be necessary to counteract completely the buffer contents of the milk outside the body.

8. Blatherwick, N. R., and Long, M. L.: Studies of Urinary Acidity: Some Effects of Drinking Large Amounts of Orange Juice and Sour Milk, J. Biol. Chem. **53**: 103 (July) 1922.

urines, which were found to result from the excretion of increased amounts of acid phosphate. Scheer likewise found an increase in the excretion of phosphate and of acid, by way of the urine, in infants who were given hydrochloric acid milk. It should be borne in mind, in this connection, that citric acid is a normal constituents of cow's milk, and that its percentage increases when the fodder of the cows is changed from stall feeding to grazing.[9]

COMBINATION WITH EGG YOLK

In previous articles,[10] it has been reported that egg yolk is rich in the antirachitic factor, and is able to protect infants and rats against rickets, or bring about cure where this disorder already exists. The addition of one egg yolk to a quart of milk mixture was found to be of decided therapeutic value. Infants as young as 6 weeks of age were found to thrive on a daily quota of half a yolk. These favorable results have been confirmed by others.[11] On the basis of these clinical experiences, we have prepared milk mixtures containing both lemon juice and egg yolk, with the primary object of incorporating an adequate quantity of the antirachitic as well as of the antiscorbutic factor—food essentials that are notably lacking in cow's milk.

Hydrogen-Ion Concentration of Milk with Additions of Egg Yolk and Lemon Juice

	p_H
One egg yolk + 3 c.c. of water	5.95 to 6.15
One egg yolk + 6 c.c. of water	6.04 to 6.26
Whole milk	6.53 to 6.64
Whole milk + 2.8 per cent. of lemon juice	5.35
⅔ milk, ⅓ water + 2.8 per cent. of lemon juice	4.68 to 4.74
⅔ milk, ⅓ water + 2.8 per cent. of lemon juice + 2.2 per cent. egg yolk	4.83 to 4.85

The ash of the yolk of egg, according to Sherman,[12] contains an excess of acid-forming elements amounting to 26.69 c.c. per hundred grams, in terms of a normal acid solution; when tested by the potentiometer, we found its p_H to be about 6.0. It is therefore slightly acid. This degree of acidity is not sufficient, as has recently been suggested, to account for its antirachitic action.[13] It may be added, moreover, that, about two years ago, prompted by Scheer's success with hydrochloric acid milk in tetany, we attempted to cure some cases of rickets by means of hydrochlorc acid milk, but failed to note any benefit, as judged by the clinical signs, by the roentgenograms, or by the inorganic phosphate content of the blood. The buffer action of egg yolk is approximately the same as that of milk, as shown by the accompanying table. It will be noted that the addition of one egg yolk to a quart of a preparation composed of two thirds milk and 2.8 per cent. lemon juice altered the p_H only from 4.7 to 4.85. It produced a negligible variation, likewise, when the lemon juice was only 2.2 per cent., the strength in whch it was usually added to the milk.

Clinical results with the mixture of milk, lemon juice, sucrose and egg yolk were satisfactory. The infants tolerated it just as well as they did the milk and egg yolk, which we had used extensively for some years. They gained remarkably well in weight, and their muscles showed similar firmness. The stools had the characteristic golden yellow that the yolk produces. There were no manifestations of indigestion or of protein sensitization. Babies as young as 3 months of age were fed the mixture, most of them receiving a formula containing milk in the ratio of two-thirds the total volume.

The advantages of this formula are, as stated, that it amplifies the simple milk formulas by supplying both the antirachitic and the antiscorbutic factors. It likewise reduces the buffer action of the cow's milk, rendering it in this respect more nearly comparable to breast milk; should it be found advisable to add larger amounts of lemon juice, this can be done without causing any digestive disturbances. Furthermore, it provides additional fat-soluble vitamin and iron. The normal requirement of this vitamin has not been established, nor is it known to what extent the diet of infants may be inadequate in this factor. It has been definitely shown, however, that its content in the milk is dependent on the fodder of the cow, so that at times it may be insufficient when cows are stall fed. Finally, the addition of iron in the yolk compensates for the well known deficiency of milk in this constituent.

CONCLUSIONS

Lemon juice or orange juice can be added directly to cow's milk without bringing about curdling. By mixing approximately 21 c.c. of lemon juice with a quart of milk, its buffer action is markedly reduced and the hydrogen-ion concentration increased from p_H 6.64 to about 5.54. In this way, cow's milk is rendered more digestible, and its true acidity in the stomach is made to resemble more nearly that of human milk. Infants who received milk prepared with lemon juice thrived well for long periods.

Lactic acid or hydrochloric acid have been added to cow's milk with the same object in view. One advantage of using lemon juice for this purpose is that it also supplies antiscorbutic vitamin, thus compensating for the deficiency of this essential factor in milk.

Egg yolk can be combined with the mixture of milk and lemon juice with but slight alteration of the hydrogen-ion content. This combination is well borne by infants. By this means a food is prepared which compensates for the nutritional deficiencies of cow's milk, furnishing both the antiscorbutic and the antirachitic factors, as well as additional fat-soluble vitamin and iron.

16 West Eighty-Sixth Street.

9. Hess, A. F.; Unger, L. J., and Supplee, G. C.: Relation of Fodder to the Antiscorbutic Potency and Salt Content of Milk, J. Biol. Chem. **45**: 229 (Dec.) 1920.
10. Hess, A. F.: The Therapeutic Value of Egg Yolk in Rickets, Proc. Soc. Exp. Biol. and Med. **20**: 369, 1923; J. A. M. A. **81**: 15 (July 7) 1923.
11. Casparis, Horton; Shipley, P. G., and Kramer, Benjamin: Antirachitic Influence of Egg Yolk, J. A. M. A. **81**: 818 (Sept. 8) 1923.
12. Sherman, H. C.: Chemistry of Food and Nutrition, Ed. 2, New York, the Macmillan Company, appendix.
13. Jones, M. R.: Hydrochloric Acid Therapy in Rickets, J. A. M. A. **82**: 439 (Feb. 9) 1924.

Cooperation of Viruses as Double Infections.—Next to the disturbances in parasite equilibrium produced by the movements of animals and the continual forcing of reproductive functions, we find the cooperation of viruses in the form of double infections highly destructive. It is well known that epidemics of certain diseases are at times extremely mild, at other times highly fatal. The cause lies chiefly in the cooperation of a second with the primary virus. It is also in line with information gained by experiments that in epidemics the secondary virus may gain in virulence by a rapid passage through plenty of prepared and susceptible material, as in armies. Prompt segregation of the sick animal and destruction of the bodies of the dead may cut the chain of sequences and destroy the exalted secondary virus on its way. —Theobald Smith: *Edinburgh Medical Journal* **31**: 229 (April) 1924.

Clinical Notes, Suggestions, and New Instruments

EXPLOSIBILITY OF ETHYLENE

CARL HENRY DAVIS, M.D., MILWAUKEE

Fortunately, operating room explosions from ether or other explosive substances are not common; but, in spite of ordinary care, they do occur. The frequency of their occurrence cannot be determined, as they are not reported. W. E. Brown has recently shown that ether combinations used daily in operating rooms are highly explosive. In his experimental tests, it was found that they are fully as explosive as ethylene-oxygen. Having had a recent ethylene explosion under conditions that would have seemed impossible according to the experimental results of Brown, it seems worth while to report the accident and make certain suggestions that may reduce the chances of others having a similar experience.

After hearing Brown read his paper on "Explosibility of Ethylene Mixtures"[1] before the Congress of Anesthetists in Chicago, last October, I, with many others, believed that it was safe to use a cautery in the operating room, if the same precautions used with ether were employed. This was done in the course of abdominal and vaginal operations from November until March 12, 1924, when the accident occurred.

In the course of a short perineal operation, the cautery was used to remove a small internal hemorrhoid. I presumed that the current had been turned off before handing the cautery back to the nurse, but when the tip reached the level of the patient and came near the body of the intern's assistant, there was a flash which singed his eyebrows, and a flame like that produced by a trail of powder followed the level of the patient's body to the inhaler, where there was a big flash caused by the explosion of the celluloid mask. The patient's face and right shoulder received painful burns from the burning of the mask. The ethylene coming through the inhaler tube continued to burn with a low flame until the gas was turned off. This was the first operation that morning, and the anesthetic had been administered about twenty minutes when the explosion occurred.

Brown, from his experimental study, concluded that it would take six hours of continuous anesthesia to secure a sufficient concentration of ethylene in the room to make an explosion possible. Our experience indicates that there are other factors to be considered, since an explosion did occur in a room with a window and two doors open within about twenty minutes after starting an ethylene anesthetic.

Ethylene has a specific gravity of 0.978 as compared with air and therefore tends to float, while the fumes of ether settle to the floor. Under certain conditions, we have been able to see what was undoubtedly ethylene gas floating out through an open window. Apparently, it tends to follow the air currents rather than diffuse equally throughout the room. Our case shows that it may be carried some distance in an explosive concentration. Gasoline, benzin and ether fumes in an explosive concentration have been carried by air currents to a flame many feet away from the container.

In our case, the ethylene was carried by the air current over the patient's body toward the open window. The body of the intern apparently acted as a dam in the air current, which may have caused a somewhat greater concentration of the gas at this point. The heat in the cautery tip was evidently sufficient to ignite the gas mixture. However, a static spark between the intern's body and the cautery tip is a remote possibility, since there was an unusual tendency to such sparks on the day of the explosion.

Fortunately, the accident did not endanger the patient's life, as it might well have done had it occurred during a laparotomy; and, while painful, the burns were superficial and no permanent scars will result. In view of Brown's careful experiments, this accident may be classed as a freak, yet I believe that it shows the necessity of additional safeguards. The following suggestions are therefore offered:

1. No inflammable anesthetic should be used in a room with the roentgen ray or other spark-producing apparatus.

2. Neither ether nor ethylene should be used when either surgical diathermy or the cautery is to be used about the head.

3. A cautery should not be used when ethylene is employed as an anesthetic. If used during an ether anesthesia, the mask should be covered with a wet towel and the ether can removed from the proximity of the patient during its use. Ether administered with nitrous oxid-oxygen should be discontinued while a cautery or other apparatus producing heat is being employed.

4. Celluloid should not be used in the manufacture of face masks because it is highly inflammable and will increase the possibility of painful burns in the case of an explosion. The mask can be made entirely of rubber and other noninflammable material. The lobe of the ear may be used as an index to the color of the patient.

5. The liability of explosions when ethylene is used may be minimized by running a tube from the exhale valve to the outside of the building. This would also largely eliminate the odor of the gas, which is slightly nauseating to some persons.

6. The slight possibility of a defective cylinder bursting on the operating floor and thereby liberating a large amount of gas suggests the advisability of storing the cylinders in an outbuilding, and piping the ethylene gas to the operating room under low pressure. Explosive concentrations must be avoided, since electrical sparks are always possible from electric light switches, suction motors, etc., and gas burners are found on many operating floors.

7. The possibility of an ethylene explosion naturally restricts its use; but this should not deter us from using it when indicated, if the experimental and clinical studies show that it is less injurious than ether or the combination of nitrous oxid-oxygen and ether. From experimental and clinical observations, which will be reported later, I believe that ethylene is a most valuable anesthetic and is destined to have a wide usage.

141 Wisconsin Street.

1. Brown, W. E.: Explosibility of Ethylene Mixtures, J. A. M. A. **82**: 1039 (March 29) 1924.

HERNIA THROUGH THE FORAMEN OF WINSLOW

JOHN DOUGLAS, M.D., NEW YORK

In a recent article giving a careful review of the literature on the subject, Ullman[1] states that only thirty reports of cases of intestinal hernia through the foramen of Winslow can be found in which the diagnosis has been verified either by operation or by necropsy. Of these, only two are reported in the American literature, his own case and one by Engstad.[2] The case reported here is therefore considered of sufficient interest to place on record.

REPORT OF CASE

History.—M. L. K., a woman, aged 76, admitted to St. Luke's Hospital, June 16, 1919, for five days before admission had suffered from general abdominal cramps, but had had no nausea or temperature elevation. The bowels had moved up to forty-eight hours before the time she entered the hospital, and during the twenty-four hours before admission she had vomited frequently. The only statements of any possible relevance in her family or previous history were that she had typhoid many years before and that her daughter had died of carcinoma.

Physical Examination.—The abdomen was distended, but there was no rigidity of the abdominal wall. It appeared by palpation and percussion that the small intestine, the cecum and the right half of the colon were distended with gas, while the descending colon and the sigmoid appeared collapsed. No tumor or mass could be felt. Because of these physical signs,

1. Ullman, Alfred: Hernia Through the Foramen of Winslow, Surg., Gynec. & Obst. **38**: 225 (Feb.) 1924.
2. Engstad, J. E.: Hernia Through Foramen of Winslow, J. A. M. A. **72**: 411 (Feb. 8) 1919.

the age of the patient and the rather gradual onset of the symptoms, a diagnosis of intestinal obstruction due to carcinoma in the region of the left part of the transverse colon or the splenic flexure was made.

Operation and Result.—A left rectus incision at the level of the umbilicus was made, when it was observed that a loop of the small intestine ran upward and to the right, in front of the transverse colon; the proximal arm of the loop was distended; the distal arm partly collapsed. Following this loop with the hand, it could be felt that it went to the region of the foramen of Winslow, and gentle traction pulled out from 12 to 14 inches of intestine that was distinctly red and congested, and which had herniated into the lesser sac. The foramen of Winslow could then be felt to admit easily two fingers. The distention of the right colon and the empty condition of the descending portion were explained by the pressure of the loop of the small intestine, crossing in front of the transverse colon. The loop of ileum was placed in the lower abdomen, and the omentum and the transverse colon were pulled down as far as possible in front of it.

There was a spontaneous evacuation of a large yellow stool two hours after the operation, and the patient made an uneventful recovery, in view of her advanced age, being discharged four weeks later. A letter from her, two years after her discharge, stated that she had no further symptoms of abdominal disturbance.

SUMMARY OF REPORTS

In Ullman's compilation of thirty cases from the literature, there were twenty males and five females; no sex was mentioned in five reports. Of the cases of the female sex reported, two were from necropsies; three operative cases resulted in recovery. The age was given in twenty cases, the oldest being 66, the youngest 5. The large intestine was herniated in nine cases, the small intestine in eighteen. Ten cases were reported from necropsies, or in which death occurred before operation. Laparotomy was performed on twenty patients, twelve of whom died and eight recovered. A preoperative diagnosis was never made, and the condition was seldom suspected.

The patient whose history is here recorded, the third case in the American literature, is therefore the oldest reported, the sixth female in whom the lesion has been reported, and the ninth patient to recover after an operation for hernia through the foramen of Winslow.

568 Park Avenue.

AN UNUSUAL CASE OF FRACTURE-DISLOCATION OF THE FEMUR

GEORGE R. HARRIS, JR., M.D., CHICKASAW, PA.

D. H., a boy, aged 9, was running over heavily crusted snow, when he broke through and fell forward. Another boy, who was running close after him, fell over him. The patient was unable to arise, and was carried home. When seen four hours later, the right leg was in eversion and partial flexion. The head of the femur was felt over the obturator foramen, and, on the slight motion possible, crepitus was felt. The fracture was at the junction of the middle and upper thirds of the femur. The next day, under chloroform anesthesia, reduction of the dislocation was accomplished, and the leg was put in extension with adhesive strips; a weight of about 10 pounds was then placed over the end of the bed. The right leg measured 25½ inches (64.7 cm.), and the left, 27 inches (68.5 cm.), measuring from the anterior superior spine of the ilium to the inner malleolus. After three weeks there was union of the fragments, and the measurements were 26½ inches (67.2 cm.) and 27 inches (68.5 cm.) for the right and the left legs, respectively. At the fourth week, the boy was up on crutches.

The interest in this case arises from several factors: (1) the unusual combination of fracture of the femur with dislocation; (2) the comparative rarity of dislocation over the obturator foramen, and, (3) the difficulty of reduction of the dislocation without disturbing the fracture, with resulting extravasation of blood and possible injury to surrounding structures.

OBSERVATION OF A PATIENT DURING A CEREBRAL ANGIOSPASM

BENJAMIN FINESILVER, M.D., NEW YORK

The occurrence of a transient hemiplegia, monoplegia or aphasia, appearing in cases of advanced arteriosclerosis, during a spasm of the cerebral vessels, is not very uncommon. The physical signs and symptoms present in such patients are varied and interesting. Textbooks and the literature have made mention of such occurrences, but fail to give a vivid picture of the patient during such attacks. These spasms, with their ensuing signs and symptoms, are very characteristic, often brief, at times lasting a day or two, and at times disappearing within a few hours.

However, few physicians have been fortunate enough to observe the onset, disappearance and subsequent findings presented by spasm and relaxation of the cerebral vessels. Many even doubt their occurrence, for any and all information obtained is most frequently derived from the description of the attack given by the lay observer.

The present case, from the service of Dr. S. P. Goodhart at the Montefiore Hospital, New York, is reported because the attack was of but a few minutes in duration, and because there was opportunity to observe the patient before, during and after the spasm had occurred.

REPORT OF CASE

E. C., a woman, aged 70, a native of Russia, whose family history and past personal history were negative, complained chiefly of general weakness and difficulty in getting about. Her present illness dated back about a year, and was progressively getting worse.

The patient was very garrulous and alert, and able to sit comfortably in a wheel chair. The skin of the face showed patches of telangiectasis and excessive wrinkling. The fundi of the eyes showed the presence of arteriosclerotic vessels. The right pupil was greater than the left; both were irregular, but reacted promptly to light and in accommodation. There was a bilateral and equal enophthalmos. The extra-ocular movements were well performed. The ears, mouth, tongue and pharynx were essentially normal. The neck was normal. The spine showed a moderate kyphosis (postural). The chest presented a poor muscular development, but was symmetrical. Percussion of the chest wall yielded a hyperresonant note, and on auscultation breath sounds were diminished throughout. The heart was moderately enlarged; the sounds were regular in rhythm, and of fair muscle quality. No bruits were audible.

The abdomen was flabby. Diastasis recti was present; the abdominal reflexes could not be elicited on that account. Otherwise, the abdomen was normal.

The left upper and lower extremities showed an exquisite parkinsonian tremor, with vasomotor and trophic disturbances in the distal ends of both lower extremities, greater on the left than on the right.

The deep tendon reflexes were obtained with the utmost difficulty. There was no Hoffmann's sign, no Babinski reflex, nor any other evidence of pyramidal tract involvement.

Sensory examination could not be determined, owing to the fact that the patient was exceedingly garrulous and would not cooperate properly.

About three minutes after this examination had been made, and while the patient was being taken to her room, the nurse in charge called our attention to the fact that a change had occurred in the patient's condition.

The patient now presented an entirely different picture. She was unable to support her head, which fell flaccidly to the left and rested on her left shoulder. Her speech, which but a few moments before was high and continuous, was now indistinct, muttering and unintelligible. There developed a distinct lower left facial paralysis. The pupils still reacted to light. The tongue now deviated to the left. The patient's mentality was still unimpaired; she recognized that something unusual had happened to her, but was utterly helpless.

The left upper and lower extremities became flaccid, and the parkinsonian tremor, together with voluntary power, which was so exquisitely present but a few moments before, were gone. The entire left side of the body was more cyanotic than the right.

The heart, while regular before, now showed many extrasystoles; it was feeble, and the rate was 84 a minute.

There was a definite Babinski reflex of the left lower, and a definite Hoffmann sign of the left upper, extremity.

At the time of this examination, it was thought that the patient had a slight hemorrhage or embolus in the region of the right internal capsule. However, while these observations were being made, the patient was gradually regaining power in the extremities. The unquestionable Babinski reflex and Hoffmann sign, which had been present only a few moments before, could not be elicited now. Speech became more distinct, and the patient was able to support her head again. The parkinsonian tremor gradually returned, the tongue now protruded in the midline, and the lower facial paralysis on the left side soon disappeared.

The next day the patient showed no ill effects from her experience, and exhibited none of the signs that had been present during the attack.

COMMENT

The whole picture is that of cerebral angiospasm of the vessels of the right side of the brain, and is interesting because all its phases have been observed and recorded as they occurred in the patient. Worthy of especial attention is the rapidity and transient nature of the important physical signs ushered in by such an attack.

2481 Valentine Avenue.

OBSERVATIONS ON THE EFFECTS OF INSULIN INTRODUCED INTO THE MEDIUM OF TISSUE CULTURES *

GEORGE O. GEY, B.S., AND WILLIAM THALHIMER, M.D.,
MILWAUKEE

A summary of the effects on the growth of tissue in vitro noted when insulin had been added to the culture medium is presented because of its potential value in this line of investigation.

Dr. Thalhimer suggested the addition of insulin as a possible means to augment the growth of tissue and to disclose the nature of its action.

Chick fibroblasts were cultivated from 9 to 10 day old embryos, the Carrel flask method being used. The medium contained glucose in percentages from 0.1 to 2.5. Two sets of cultures were maintained. To one set, from 1 to 2 per cent. of insulin was added; to the second, otherwise identical, no insulin was added.

The sugar content was determined in duplicate cultures by the Folin-Wu method, and the H-ion concentration was estimated by the drop calorimetric procedure. The perimeter of the growth was compared by using the planimeter method of Carrel and Ebeling.

Cultures grown in the presence of insulin showed after from two to four days constantly lower sugar values and slightly lower p_H values than the controls. The increased utilization of sugar was apparently attributable to the insulin present, as it did not depend on the concentration of glucose in the culture medium.

The cultures grown in the presence of insulin, with but few exceptions, showed a larger and heavier growth than their controls. The growth rings of the exceptions were approximately the same as those of their controls.

The cultures grown in the presence of insulin were found by microscopic examination to have developed a distinct and constant vacuole formation which was absent in the controls. The formation of vacuoles appears to have been independent of the p_H of the medium, as it occurred when the p_H level was optimal.

Apparently, the presence of insulin in the culture mediums augments the rapidity of growth and increases the metabolic activity of tissue grown in vitro. The greater metabolic activity of malignant tissue, particularly its repeated increased utilization of sugar, suggests the existence of a similar mechanism therein.

* From the Laboratory for Cancer Research, Columbia Hospital.
* Read before the American Association for Cancer Research, Buffalo, April 17, 1924.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ETHYLENE FOR ANESTHESIA.—Aethylenum pro narcosi.—It contains not less than 98 per cent. by volume of ethylene ($CH_2:CH_2$).

Actions and Uses.—Animal experiments by W. E. Brown (*Canadian M. A. J.*, March, 1923, p. 210), Luckhardt and Carter (J. A. M. A., March 17, 1923, p. 765) indicate that ethylene has a direct action on the nervous system when a concentration of 90 per cent. ethylene and 10 per cent. oxygen or less is used, that the motor reflexes are abolished with this concentration and that the phenomena produced by the undiluted gas are partly asphyxial, which effect can be removed by addition of oxygen to the ethylene itself.

Trials on human subjects have confirmed the anesthetic and analgesic value of ethylene as demonstrated on animals. Deep surgical anesthesia is stated to be produced easily, and analgesia comes on readily and apparently long before surgical anesthesia is established. Given with oxygen, it has been found more powerful than nitrous oxide for animals and man, and in most instances as effective as ether; unlike ether it causes no respiratory irritation and does not promote salivary secretion.

A considerable number of trials give promise that ethylene is of value for the production of surgical anesthesia and that it has advantages over nitrous oxide. These advantages are stated to be equally rapid but more pleasant induction, satisfactory relaxation without cyanosis or sweating and rapid recovery. The disadvantages of ethylene are the odor, which is slightly offensive to some, the inflammability of the gas and apparently an increased oozing of the wounds during but not after its use. So far, no contraindications to its use have been discovered.

Dosage.—Ethylene for anesthesia is supplied in compressed state in metal cylinders. For use the gas is passed into an inhalation apparatus and is then inhaled with or without admixture of oxygen. The concentration employed for surgical anesthesia is generally 90 per cent. ethylene and 10 per cent. oxygen, though after a prolonged period of anesthesia, a deep anesthetic state may be maintained on 80 per cent. ethylene. To avoid accidental explosion, ethylene for anesthesia must not be brought in contact with a naked flame or an electric spark.

Manufactured by the U. S. Industrial Chemical Co., New York (Ohio Chemical & Manufacturing Co., Cleveland, distributor). No U. S. patent or trademark.

Ethylene for anesthesia is a colorless gas possessing a slightly sweet odor and taste which is offensive to some. It is somewhat lighter than air. Pure ethylene is solid at below −169.4 C. and boils at −103.9 C. The gas is inflammable and a mixture of it and oxygen explodes when brought in contact with a flame or an electric spark.

One volume of ethylene dissolves in about 4 volumes of water at 0° C. and in 7 volumes at 20 C., and in about one-half volume of alcohol at 25 C. It is also soluble in ether.

Pass 1,000 Cc. of ethylene for anesthesia measured under normal atmospheric pressure at about 25 C. through 50 Cc. of barium hydroxide solution at a rate not exceeding two bubbles per second; not more than an opalescent turbidity is produced (*carbon dioxide*).

Pass 1,000 Cc. of the gas through 50 Cc. of distilled water to which 2 drops of methyl red solution has been added; the color of the liquid is not changed (*acids; sulphur dioxide*).

Pass 1,000 Cc. of the gas under the condition prescribed in the preceding test through 15 Cc. of silver ammonium nitrate solution; no turbidity or darkening is produced (*acetylene, phosphine, aldehyde, hydrogen sulphide*).

Pass 1,000 to 1,500 Cc. of ethylene for anesthesia measured accurately under normal atmospheric pressure and at 25 Cc. into a suitable gas pipette containing fuming sulphuric acid. The residual gas (after treatment with potassium hydroxide solution to absorb the sulphur trioxide) is not greater than 2 per cent. of the volume of ethylene used (corresponding to not less than 98 per cent. of ethylene). When the residual gas (after removal of oxygen by alkaline pyrogallol solution) is treated with freshly prepared acid cuprous chloride solution (15 Gm. of cuprous oxide in 100 Cc. of hydrochloric acid, U. S. P.), no contraction of volume should be noted (*carbon monoxide*). (Note.—If mercury is used as sealing liquid in the burette and hydrogen chloride vapors are present, the gas should be passed over potassium hydroxide before making final reading.)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

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Subscription price - - - - - - Five dollars per annum in advance

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SATURDAY, MAY 17, 1924

SILICA IN TUBERCULOSIS

A recently published volume on tuberculosis [1] reminds the reader of the well known axiom that the curability of a disease is in inverse ratio to the number of drugs and therapeutic measures used against it. Thus, malaria, in which the treatment consists essentially of quinin and arsenic, and syphilis, with iodin, mercury and arsenic as its curative agents, are the two diseases in which drug therapy is the most satisfactory. Hence, the writer continues, the more drugs and therapeutic measures that have been and still are used against a disease, the more is the conclusion justified that we as yet know no real cure of that disease. This is the case with tuberculosis.

This malady has been attacked alike by nonspecific chemical therapy and by the highly lauded specific chemotherapy that Ehrlich's researches have brought into prominence in various fields. In the list of chemical agents reputed to benefit tuberculous patients, compounds of silica have found a place in recent years. In view of their extreme insolubility, one would scarcely expect them to exert any immediate pharmacodynamic effects; nevertheless there is evidence that silica finds its way into tissues and organs, where it remains deposited, notably in connective tissues. This has given rise to the hypothesis that the element plays a part in determining the elasticity and tensile strength of fibrous tissues, although the smallness of the quantities of silica ordinarily found should make one extremely skeptical about the validity of any conclusion of this sort. Nevertheless, various silica-containing teas or drugs have been recommended in the hope that they would increase the amount or improve the quality of the connective tissue that forms the defense about tuberculous lesions.

Although even the often optimistic clinical reports on the use of silica preparations in the treatment of tuberculosis are far from convincing to a critical reader, the subject is one that deserves a careful study, if for no better reason than to eradicate incorrect and therefore possibly harmful conceptions. At the Sprague Institute in Chicago, Maver and Wells [2] have secured nothing except negative results through the administration of silica preparations to tuberculous animals. Nor was the duration of life increased or the extent of the tuberculous involvement of the tissues modified by such treatment. There was no difference in the degree of fibroplastic reaction to tuberculous infection of various organs.

Pneumonokoniosis resulting from the inhalation of dusts is known to affect the progress of pulmonary tuberculosis. The dusts vary in composition, depending on their source. An abundant experience has demonstrated that the inhalation of coal dusts is best tolerated and may even afford some protection. Dust from lime is less favorable; and exposure to silicious dusts is particularly objectionable, the fine, crystalline material leading to fibrosis in the lungs. These facts also can scarcely be advanced to favor the vaunted silica therapy in tuberculosis.

1. Wells, H. G.; DeWitt, L. M., and Long, E. R.: The Chemistry of Tuberculosis, Baltimore, Williams and Wilkins Company, 1923.

SUGAR AND HEART FUNCTION

It happens, not infrequently, that the picture presented by the pathologic aspects of some bodily process creates a distorted impression of the normal phenomena of the same function, or tends to overshadow and obscure their true physiologic purpose. Thus, any one whose thoughts are being directed day by day to excesses of circulating sugar that are exemplified in hyperglycemia and lead to glycosuria is liable to become oblivious of the proper part the carbohydrate plays in promoting the welfare of the organism rather than in engendering disease. Certain features associated with the recent widespread clinical use of insulin have served to awaken a better realization of the place of sugar in normal metabolism, as well as its obtrusion into the perverted chemical processes of the body. It has become clearly established in the minds of the physician, though the layman needs to have the same knowledge more vigorously impressed on him, that an overdosage with the pancreatic hormone to the extent of depleting the blood of part of its usual content of sugar is attended with immediate distress and even danger. Macleod [3] has pointed out that when, in man, the blood sugar decreases to about 0.075 per cent., the patient experiences extreme hunger and a sense of fatigue. He usually becomes anxious, and may lose his emotional control. Actual tremor of the musculature is rarely seen, but there is a definite sense of tremulousness and some incoordination for fine movements. Vasomotor phenomena are common; pallor or flushing, sometimes one after the other; a sense of heat, of chilliness; almost always a profuse sweat. At lower levels

2. Maver, Mary E., and Wells, H. G.: The Influence of Silica Compounds on Experimental Tuberculosis: Studies on the Biochemistry and Chemotherapy of Tuberculosis, XXIX, Am. Rev. Tuberc. 8: 318 (Dec.) 1923.

3. Macleod, J. J. R.: Insulin, Physiol. Rev. 4: 21 (Jan.) 1924.

of blood sugar, acute mental distress, mental disturbances, delirium and, finally, coma, with loss of the deep reflexes, supervene.

In explanation of such manifestations, it appears that the stimulus set up by the decrease of the circulating blood sugar may act on certain nerve centers, notably in the region of the pons and medulla. To some, the general nature of the symptoms has suggested that a failure of oxidative processes in the nerve cells is their immediate cause. With reference to the asthenia, the study of the cardiac musculature is particularly significant. It has long been known that a suitably perfused isolated heart can function for some time at the expense of its own stores of energy. Twenty years ago, the English physiologists Locke and Rosenheim demonstrated that, if glucose is added to the oxygen-carrying perfusion solution, a beneficial and sustaining effect is produced on the heart. The sugar is actually "used up" by the contracting muscle. By an ingenious technic, Clark [4] succeeded in showing in 1916 that the consumption of sugar by the excised mammalian heart is definitely increased when the Locke's solution with which it is perfused is also passed through the blood vessels of the pancreas. The more recent investigations of Hepburn and Latchford [5] have added the demonstration of a pronounced increase in the sugar utilization of the isolated heart when the pancreatic hormone is added in the form of insulin solution to the perfusion fluid.

It thus seems evident not only that the isolated heart is capable of taking up carbohydrate for its activity but also that its utilization of this substance is greatly augmented by insulin. What will be the effect of a reduction in carbohydrate supply to the heart in situ in the body? This is the situation presented by overdosage with insulin. Edwards, Page and Brown [6] of Cornell University Medical College have asked themselves whether the heart can continue functional activity without impairment very long under the conditions of high pressure and rate prevailing in the body, when its supply of carbohydrate is virtually cut off from the circulating blood and its own capacity for using up this substance is increased. An answer is found in their observations on the circulation of animals in a condition of hypoglycemia produced by large doses of insulin. There seems to be little primary change in the peripheral vessels accompanying the hypoglycemia. Under conditions of low sugar content, however, the heart seems to indicate a lessening of its dynamic function. This has been brought to light by electrocardiographic studies and also by records of intraventricular pressure. There may be a lengthening of the isometric period, or the phase of developing tension, and a marked decrease in the maximum pressure developed during systole. Some restoration of ventricular activity seems to be brought about by injection of glucose. These phenomena are in harmony with the current conceptions of the rôle of sugar as a primary source of energy in the organism. Sugar may be highly useful—in its proper place.

4. Clark, A. H.: Bull. Johns Hopkins Hosp. **18**: 229, 1917.
5. Hepburn, J., and Latchford, J. K.: Am. J. Physiol. **62**: 177 (Sept.) 1922.
6. Edwards, D. J.; Page, I. H., and Brown, R. K.: Some Cardiovascular Changes Accompanying Insulin Hypoglycemia, Proc. Soc. Exper. Biol. & Med. **21**: 170 (Jan.) 1924.

DIET AND TEETH

Only a few years ago, the problem of carious or defective teeth was looked on as one primarily of concern to the dentist. The damage to the dental structures seemed to be so obviously local in many cases that the specialist's eyes and only his were focused on them. There is an increasing realization today, however, that the condition of all bony structures in the body may be profoundly involved by the nutrition of the organism during the period, at any rate, of most active growth and bodily development. This situation in current knowledge has been developed in no small measure as the result of the recent studies of certain deficiency diseases, notably scurvy and rickets. The changing views and the contrasting schools of thought are discernible in present-day discussions of dental problems. One group emphasizes oral prophylaxis with a vigor that implies bacterial invasion of the teeth to be the foremost factor in the preservation of these structures; whereas other students of the subject are more inclined to seek more far-reaching etiologic possibilities, among which dietary disturbances loom largest in their eyes. It requires little critical acumen to note that the two general possibilities do not represent conflicting factors. Inadequate or incorrect nutrition may open the way for microbiotic changes that are ordinarily resisted by a tissue that is in perfect health and thus endowed with a normal modicum of the factors of safety and resistance. Infection and immunity are antagonistic tendencies remaining in beneficent equilibrium when "all is well" in the body.

There is widespread acceptance of a sort of "all or none" principle in many branches of physiology. Perhaps the idea has been given an application that is too broad by its advocates. We are wont to believe, with considerable justification, that the products of biologic synthesis tend to be normal in their make-up, else they are not formed. The saliva always approximates the same fundamental composition, though the amount formed may vary widely. Milk is, in general, the same from day to day in the same species. There may be a larger or smaller volume, and the content of fat may vary slightly; but the mammary product always contains essentially the same proportions of certain highly characteristic organic and inorganic nutrients. Hence the familiar dictum that the quality of the milk is for the most part determined by breed rather than feed.

Can a tooth once formed be changed by diet? The question is obviously not strictly analogous to that presented by the secretions synthesized in the body. If

the teeth represent living changeable parts of the body as other organs do, one might expect chemical changes in them to attend profound disturbances. The development of unusual conditions in the teeth under conditions of dietary upset has been reported by a number of histologists, notably in the case of the teeth of scorbutic animals. Toverud [1] has extended these studies recently by making analyses of the histologically altered structures, which show that the chemical picture also may be altered. In scorbutic animals, for example, a marked decrease in total ash and calcium and a marked increase in magnesium have been found. In animals existing on diets poor in calcium, chemical changes have been detected both in the constantly growing front teeth and in the fully formed molar teeth. The chemical process in the two kinds of teeth seems to be a different one. Analyses of the molars show a reduction in the total ash, with a small decrease in the calcium and phosphorus and a small increase in the magnesium content. Analyses of front teeth show a reduction in all respects. These studies of Toverud seem to warrant the assertion that it is possible to produce chemical changes in an already formed tooth by changing the diet. The tooth is evidently no exception among the bony structures. The consideration of dental caries must henceforth take this fact into account.

THE VARYING SUSCEPTIBILITY TO RICKETS

Aside from a possible insufficiency of the so-called antirachitic vitamin, no single defect is common to the diets of all rachitic children. Some infants, Park [2] writes, develop rickets on foods that do not produce rickets in others. Infants may develop rickets even when a diet is composed of breast milk. Premature infants usually develop rickets, even when the food is breast milk. These facts, Park continues, make it necessary to conclude that the human organism is peculiarly dependent on the presence of radiant energy or its equivalent in the food, and that rickets may develop when the organism is deprived of it, even though the diet is what is commonly considered well constituted.

Rickets is so widespread today in this country that a better understanding of its treatment is as immediately imperative as is the investigation of the etiology of the disorder. The importance of radiant energy, such as that afforded by sunlight or artificial illumination rich in ultraviolet rays, has properly come into prominence through a series of brilliant researches beginning with the observations of Huldschinsky reported in 1919. These have demonstrated a most significant way in which environment can modify the development of the bones with respect to the metabolism of calcium and phosphorus. Recent studies have tended to indicate, however, that there are also marked differences in what might be termed the susceptibility to rickets. Good nutrition, so far as it is expressed by gain in weight in the young, is by no means a guarantee against the onset of the disease. Sometimes infants who have been nursed inadequately, owing to an insufficient supply of milk or unduly prolonged nursing, show noteworthy increments in size when a bountiful diet is later supplied; yet this gain may be attended by the development of rickets.

A consideration of such circumstances has led to the belief that there may be large differences in the "vitamin reserves" of different individuals. The problem is one of large importance if it involves the possibility of developing a "refractory" state against rickets, either by suitable attention to the mother during the prenatal period or by appropriate measures directed toward the function of lactation. In experiments on animals, Hess, Weinstock and Tolstoi [3] seem to have demonstrated that in some individuals there may be a marked lack of susceptibility to rickets, mobile in character and readily overcome by alterations in the dietary. The condition was best accounted for by assuming the previous storage of a protective substance obtained either indirectly through the agency of mother's milk or directly from other food.

It has therefore become important to learn whether a specific, such as cod liver oil, in the prevention and cure of rickets in both man and animals can be transmitted indirectly, so to speak, to the young so as to increase their resistance or diminish their susceptibility to such defective bone development. Does the "active principle," fed to pregnant individuals, pass through the placenta so that it can reach the fetus? Is it secreted into the milk in quantities sufficient to protect the young? From animal tests, Hess and Weinstock [4] have reported that cod liver oil, when given to the mother during pregnancy, cannot be relied on to protect the offspring from rickets. Furthermore, the active principle of the oil is not excreted in the milk in adequate amount; rats receiving even large doses of cod liver oil were unable to afford protection to their young which were subsequently placed on rickets-producing diets. On the other hand, cod liver oil did confer subsequent protection when fed directly to the young during the latter half of the lactating period and not through the medium of the mother's milk, demonstrating the essential difference between direct and indirect nutrition. This protective power suggests that the specific factor in the oil can be stored by the young and drawn on in time of need. Although it cannot be taken for granted that these results are applicable to human rickets, it is probable, according to Hess and Weinstock, that such distinction as exists is one of degree rather than of

1. Toverud, G.: The Influence of Diet on Teeth and Bones, J. Biol. Chem. **58**: 583 (Dec.) 1923.
2. Park, E. A.: The Etiology of Rickets, Physiol. Rev. **3**: 106 (Jan.) 1923.
3. Hess, A. F.; Weinstock, Mildred, and Tolstoi, E.: The Influence of the Diet During the Preexperimental Period on the Susceptibility of Rats to Rickets, J. Biol. Chem. **57**: 731 (Oct.) 1923.
4. Hess, A. F., and Weinstock, Mildred: Antirachitic Effect of Cod Liver Oil Fed During the Period of Pregnancy or Lactation, Am. J. Dis. Child. **27**: 1 (Jan.) 1924.

kind. Amid the uncertainties of current knowledge, therefore, the dictates of safety would seem to encourage the free employment of antirachitic measures at an early age as a supplement to milk whenever, for any reason, the incidence of rickets is likely to be large.

Current Comment

LO, THE POOR CHIROPRACTOR

A wail from Davenport, out where the West begins: B. J. Palmer, the well known head of the "fountainhead of chiropractic," is frankly worried. And all on account of some chiropractors being sued for malpractice or sent to Sing Sing for manslaughter or some little thing like that. Thus, Mr. Palmer in a recent circular letter sent to the faithful:

> "It seems that word has gone out from A. M. A. headquarters to use the charge of manslaughter and malpractice and suits are coming thick and fast from every point of the compass."

The obsession that the American Medical Association is in any way related to these prosecutions is funny or pathetic, according to the point of view. In common with the quacks, the "patent medicine" makers and others who dabble in pseudoscience, Mr. Palmer dresses the American Medical Association in horrific habiliments. He endows this organization with all the legislative, executive and judicial powers of an Eastern potentate, and would have the public believe that it is a fire-breathing ogre stalking the length and breadth of the land seeking what it may devour. B. J. Palmer's latest thesis is that every successful case of malpractice against a chiropractor tends to discredit chiropractic in the eyes of the public; therefore, it behooves the Amalgamated Order of Spine-Pushers to have on tap the best legal defense possible. This may be obtained by joining the Universal Chiropractors Association—B. J. Palmer, Secretary; application fee, $10; dues and assessments, extra. Mr. Palmer conceives that if every present member of the Universal Chiropractors Association will try to get nonmembers into that organization, it will help greatly. This seems plausible! As he puts it, the faithful should try to get "these boys who are outside the fold to come in, until the storm is over at least" because, as he views it, "the situation is desperate." One gets the impression from Mr. Palmer's letter that charges of manslaughter and malpractice against chiropractors are so easily proved in court that it is well-nigh hopeless for the chiropractic defendant to employ a local attorney, as such cases are things with which a local lawyer "finds himself unable to cope." Indeed, he says, the national counsel of the Universal Chiropractors Association, "expert as they are in this line, are often unable to win the decision." All of which must make very sad reading to the followers of this cult. There is a silver lining to the cloud. Evidently there begins to dawn on the consciousness of a gullible public a suspicion that impingement of spinal nerves by subluxated vertebrae is not really responsible for smallpox, syphilis, soft corns and barbers' itch. As this skepticism waxes, chiropractic will wane.

HOOKWORM DISEASE IN THE PHILIPPINES

Among the diseases characteristic of our insular possessions, those associated with intestinal parasites are conspicuous. The same feature applies to other tropical and semitropical countries where the peculiar conditions of living in the warmer climates and less rigorous standards of public and personal hygiene contribute to the perpetuation of such infestations of the alimentary canal. In most of these places, infections with protozoa are abundant, and the hookworm is sufficiently prominent to warrant an enormous expenditure of effort and money to combat it. Somehow the impression has gone abroad that, in contrast with localities otherwise comparable, the incidence of hookworm infestation in the Philippine Islands is comparatively low, and that the Filipinos suffer little, if any, inconvenience from the worms that they may harbor. Considerable importance attaches, therefore, to the new surveys that have been conducted by experts of the Philippine Health Service, the Bureau of Science in Manila, and the International Health Board.[1] They show that hookworm disease, far from being practically negligible, is an important clinical entity in various parts of the archipelago. The reports indicate that the incidence of hookworm infestation may be expected to vary from 40 to 90 per cent. in certain of the rural districts. The typical cases often showed a high grade anemia; and clinical and laboratory studies of such persons commonly failed to reveal any cause for the blood findings other than the hookworms that they harbored. It is well known today that there are two distinct species of human hookworm, similar in structure, agreeing in all important details of life history, the two producing the same symptoms and requiring the same treatment or prophylaxis. In Europe the larger Old World hookworm, *Ancylostoma duodenale*, is more prevalent, the characteristic species on this continent being *Necator americanus*. According to examinations[2] lately made at the Bilibid prison in Manila, the scene of many notable studies in experimental medicine, out of 3,539 hookworms recovered after treatment, 2,929 were *Necator* specimens, and only 610 *Ancylostoma*, thus supporting Haughwout's prediction[3] that *Necator americanus* probably would be found to be the dominant species in the Philippines but that the ancylostome index might be fairly high.

BOTULINUS TOXIN ABSORBED FROM WOUNDS

In a recent outbreak of botulism due to home-canned asparagus, the housewife placed some of the liquor of the asparagus on her tongue, and immediately washed it off because of the burning sensation. She developed symptoms of botulism within thirty-six hours, and died in four days. In a second recent outbreak of botulism due to home-canned corn, the housewife merely crushed two or three grains of corn between her teeth, but did not swallow any of the material. She developed symp-

1. Leach, C. N.; Schwartz, B.; Leach, F. D., and Haughwout, F. G.: Hookworm Disease: A Clinical Entity in the Philippine Islands, Philippine J. Sc. **23**: 105 (July) 1923.
2. Leach, C. N.; Haughwout, F. G., and Ash, J. E.: The Treatment of Hookworm Infestation with Carbon Tetrachloride, Philippine J. Sc. **23**: 455 (Nov.) 1923.
3. Haughwout, F. G.: Some Less Familiar Aspects of Parasitology, J. Philippine Islands M. A. **1**: 93, 1921.

toms of botulism within forty-eight hours, and died in eight days. These cases, according to Geiger,[1] are the only reliable records of death from botulism from apparently rapid absorption rather than from the ingestion of the toxic food. Geiger therefore performed an interesting experiment which these cases suggested. An area 1 inch square on the abdomen of guinea-pigs was shaved, and was left red and bleeding in places; on a similar shaved area on other animals three linear incisions were made just through the skin; on other animals, on a shaved area a small skin pocket was made in the center, and on others the hair was simply plucked out. Sterile cotton swabs thoroughly moistened with toxic asparagus and corn were then rubbed vigorously over these injured skin areas. A similar swab was applied also in the vagina of other animals, and on the uninjured and normal skin of others. Every animal thus treated died with typical symptoms of botulism, except those whose skin was uninjured and normal, and those which had received antitoxin. It seems, as Geiger says, that the absorption of botulinus toxin may occur from any mucous surface, broken skin or fresh wounds, and that it is not limited to any particular part of the intestinal tract. Extreme care should always be taken, therefore, in handling packs of food suspected of being contaminated, even though the possibility of absorption from wounds may seem remote.

FURTHER RESEARCH ON HERPES ZOSTER

When the dorsal root ganglions become inflamed, as was found by Head and Campbell in 1900, an eruption of herpes follows; the pathology of herpes zoster is therefore fairly well understood. However, there are different views as to the cause of such inflammation. As was pointed out in THE JOURNAL[2] recently, Teague and Goodpasture[3] have been able to develop a virus from simple herpes and to produce herpetic lesions in the skin of experimental animals with this virus, the skin of the animals being rendered more sensitive by a previous application of coal-tar. The most recent contribution to the subject is that of the French workers Netter and Urbain.[4] The French investigators believe in the identity of herpes zoster with varicella. They report the securing of an antigen from the serum and the crusts of cases of herpes zoster, which was specific for antibodies in cases of herpes zoster. Furthermore, they seem to have demonstrated that this antigen has the same action on the blood serum from patients with chickenpox, and that the antigen obtained from chickenpox crusts is also specific for that in herpes zoster. Their views are supported further by clinical evidence, in that chickenpox appeared in the daughter in one family thirteen days after the appearance of herpes zoster in the mother; it appeared in a student sixteen days after he had visited a friend with herpes zoster, and it appeared in a man fourteen days after the appearance of herpes zoster in his wife. As has been pointed out by Kraus, the sequence herpes zoster after chickenpox is much less common than the reverse. It must be understood that not all observers are willing to grant the identity of the causative agent in chickenpox and in herpes zoster; and, if we are to arrive at any definite opinion in the matter, much more evidence will have to be accumulated than is now available. It has been suggested that herpes zoster be made a reportable disease, and that some attempt be made by health authorities to record instances in which it appears in relation to cases of chickenpox. The evidence seems to be clear that herpes is the result of some infectious agency. With the knowledge already accumulated, it is important that these points be cleared up, so that progress may not be delayed by intensive experimental investigations along wrong lines.

1. Geiger, J. C.: Possible Danger of Absorption of Toxin of B. Botulinus Through Fresh Wounds and from Mucous Surfaces, Am. J. Pub. Health **14**: 309 (April) 1924.
2. The Experimental Production of Herpetic Lesions, editorial, J. A. M. A. **82**: 1049 (March 29) 1924.
3. Teague, Oscar; and Goodpasture, E. W.: Experimental Herpes Zoster, J. M. Res. **44**: 185 (Dec.) 1923.
4. Netter, Arnold; and Urbain, Achille: Further Investigations of the Deviation of Complement in Herpes Zoster, Compt. rend. Soc. de biol. **90**: 461, 1924.

THE METABOLISM IN THE AVITAMINOSIS OF BERIBERI

The striking abnormalities ensuing on a deprivation of vitamin B, and the equally surprising phenomena of response to a restoration of the missing dietary factor, in the human as well as the experimental manifestations of such avitaminosis, have stimulated the formulation of explanatory hypotheses. Among these has been the theory that vitamin B somehow "stimulates" or "promotes" metabolism. If this view were tenable, one would expect to find a lowered exchange of energy and matter in instances in which the deficiency has clearly manifested itself. Such experiments as have already been conducted on animals have afforded little, if any, dependable evidence in substantiation of the thesis that the metabolism is profoundly depressed in vitamin B starvation. Usually this condition is attended with an induced undernutrition from lack of adequate food intake, so that it is not easy for the investigator to apportion due responsibility for the existing ills between inanition and avitaminosis. Fleming[1] has recently measured the basal metabolism at the Bureau of Science in Manila on persons suffering from beriberi. The results that he observed corroborate the findings in animals. In a series of cases of beriberi, the basal metabolic rate was found to be the same as in normal control persons. The respiratory quotients were normal; and the evidence available points to a satisfactory utilization of the food eaten. This is in harmony with Karr's[2] demonstration, several years ago, that, in dogs, lack of vitamin B does not affect the utilization of nitrogen in the alimentary tract and presumably does not primarily involve the intermediary metabolism of the nitrogenous derivatives of the proteins. In Fleming's patients there was no evidence that the high carbohydrate intake—usually in the form of rice—so characteristic of those who develop beriberi was a disturbing factor. At any rate, the values for the blood sugar were normal. One may be inclined to query whether, after all, a diet rich in carbohydrates predisposes to the diabetic diathesis,

1. Fleming, W. D.: Metabolic Mechanism in Beriberi, Philippine J. Sc. **23**: 407 (Nov.) 1923.
2. Karr, W. G.: Metabolism Studies with Diets Deficient in Water-Soluble (B) Vitamine, J. Biol. Chem. **44**: 277 (Nov.) 1920.

as is often alleged. Recently, Lusk,[3] long a student of problems of nutrition, has frankly announced that no case has been made out for the idea of diabetes being caused by excessive ingestion of sugar with consequent weakening of the power to oxidize this substance. As edema is a frequent manifestation in cases of human beriberi, it is worthy of note that Fleming found no evidence, even in edematous patients, of damage to the excretory power of the kidneys. It must still be admitted, therefore, that studies of physiologic function have thus far thrown little light on the fundamental disturbances that govern such avitaminosis. Nevertheless, as Cramer [4] has remarked in a recent address, the effects produced by the absence of vitamins are characteristic and specific for each vitamin. In every case the administration of the missing substance relieves the typical condition with a certainty and a rapidity that is one of the most striking and unique phenomena in medicine.

Association News

THE CHICAGO SESSION

Alumni and Special Reunions

Evacuation Hospital No. 12.—The officers of former Evacuation Hospital No. 12 will have a reunion during the meeting of the American Medical Association at Chicago. Those wishing to attend are asked to notify the secretary, Dr. J. C. Redington, 404 Bank of Galesburg Building, Galesburg, Ill.

Cook County Hospital Intern Alumni Banquet.—Announcement is made by committee of arrangements at Cook County Hospital of an alumni banquet to be held on June 13, 6:30 p. m., for purpose of reunion and renewal of activities of the alumni association. The committee of arrangements consists of Drs. Frederick Tice, Karl A. Meyer, H. A. Singer, Earl A. Zaus and James J. Weltman. Those planning to attend should make immediate reservation through Dr. Earl A. Zaus, Cook County Hospital.

Camp Sheridan Base Hospital.—There will be a reunion of base hospital staff of Camp Sheridan, Montgomery, Ala., at the Hotel La Salle, Chicago, Wednesday evening, June 11, at 6:30. All those desiring to attend, will kindly notify Dr. R. H. Skillern, 1928 Chestnut Street, Philadelphia, who will reserve a place for them at the table. Mess fee, $3.

MOTOR COACH TOURS AFTER THE CHICAGO SESSION

The Chicago North Shore and Milwaukee Railroad Company, familiarly known as the "North Shore Line," will institute its famous automobile tours from Chicago to scenic points in Wisconsin on June 16, the Monday following the adjournment of the Chicago Session. Luxurious motor coaches are used to carry passengers taking these tours, the first of which requires a whole week and is through the Wisconsin Dells, and the Green Bay and Fox River country. The second tour takes in the Indian Reservation and Green Bay, leaving Chicago on Monday and returning Friday night. The third tour, leaving Chicago Friday and returning to Chicago Sunday night, is to be through Madison and the Dells. The fourth, requiring one day, is from Chicago to Lake Geneva. F. W. Shappert, Traffic Manager, 814 Edison Building, Chicago, can be applied to for complete information concerning these tours.

Motor Tour to Washington and Return to Chicago

The Royal Blue Line, under the auspices and management of the Harlan Tours, will have a motor coach tour from Chicago to Washington, leaving Chicago after the session of the American Medical Association. This entire trip will require twelve days and will be by way of Battle Creek to Detroit, where a lake steamer will be taken to Buffalo. At Buffalo motor coaches will be waiting and the trip overland will be resumed by way of Niagara Falls, Canandaigua, Watkins Glen, down the Susquehanna Trail across Pennsylvania, through Williamsport and Harrisburgh to Gettysburg Battle Field, and on to Washington. The return trip to Chicago will be made over the National Highway, through mountains of West Virginia and Pennsylvania. Reservations may be made through the Harlan Tours, 202 South State Street, Chicago.

3. Lusk, Graham: Diet and Disease, Am. J. Pub. Health 14: 297 (April) 1924.
4. Cramer, W.: Vitamins and the Borderland Between Health and Disease, Lancet 1: 633 (March 29) 1924.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Arizona State Medical Association.—At the thirty-third annual meeting of this association in Phoenix, April 24-26, held under the presidency of Dr. Charles A. Thomas, Tucson, Dr. Roderick D. Kennedy, Globe, was elected president; Drs. George A. Bridge, Bisbee, John J. McLoone, Phoenix, and Albert D. Wilson, Prescott, vice presidents; Dr. Clarence E. Yount, Prescott, treasurer, and Dr. Delamere F. Harbridge, Phoenix, secretary. The next annual meeting will be held in Bisbee, 1925. A committee was appointed with Dr. Harbridge as chairman, to draft a new constitution and by-laws which would more nearly conform with the ideals of the American Medical Association. It was decided to hold public meetings in the fall in several of the larger towns, featuring public health and hygiene, in an attempt to bring before the public "a better understanding of the aims and objects of the legitimate practice of medicine."

CONNECTICUT

Personal.—Dr. Edward Fitzgerald, Bridgeport, has been appointed medical examiner of the city to succeed the late Dr. Samuel M. Garlick, and Dr. Horatio R. DeLuca has been appointed medical examiner of Trumbull, succeeding Dr. Fitzgerald.

County Medical Meeting.—At the one hundred and thirty-first annual meeting of the Windham County Medical Society, held April 18, at Danielson, the following officers were elected: president, Dr. Frank P. Todd, Danielson; vice president, Dr. William Hendry, Willimantic, and secretary-treasurer, Dr. Henry C. Dixon, Danielson.

DELAWARE

Board of Health News.—At a meeting of the board of health in Wilmington, April 29, Dr. Frederick F. Armstrong was elected secretary to succeed Dr. Robert S. McBirney. Dr. Talcasin H. Davies, Wilmington, was elected president of the board and Dr. George R. Foulk city physician.

DISTRICT OF COLUMBIA

Medical and Surgical Society.—At the twenty-seventh annual banquet of the Washington Medical and Surgical Society, April 23, Drs. Alfred Stengel, Philadelphia, and James A. Gannon, Washington, were made honorary members of the society. Dr. Ralph M. LeComte presided and Dr. John Shelton Horsley, Richmond, Va., gave an address.

GEORGIA

Hospital Completed.—The Washington General Hospital, Washington, was recently completed at a cost of $25,000. The Wilkes County Medical Society is making plans to take over the institution and operate it.

State Medical Meeting.—Officers elected at the seventy-fifth annual meeting of the Medical Association of Georgia, in Augusta, May 7-9, for the ensuing year are as follows: president, Dr. John O. Elrod, Forsyth; vice presidents, Drs. William A. Mulherin, Augusta, and Bertram H. Wagnon,

Atlanta, and the former secretary, Dr. Allen H. Bunce, Atlanta, was elected delegate to the American Medical Association. Dr. Marion C. Pruitt, Atlanta, is business manager. Dr. Sydney R. Miller, Baltimore, the honor guest of the association, gave the address on "Medicine."

ILLINOIS

Personal.—Dr. Charles Lieber, Waukegan, has been reappointed county physician and superintendent of the Lake County General Hospital.

County Secretary Boosts Hygeia.—One hundred subscriptions for *Hygeia* have been received from Dr. Phebe L. Pearsall, secretary of the Rock Island County Medical Society, Moline. These subscriptions have been taken by physicians, schools, clubs, libraries, churches, hotels, the boy scouts, the campfire girls and the American Legion.

Virulent Smallpox.—An outbreak of virulent smallpox with three deaths has been reported from Rock Island County. Up to May 10 a total of twenty-six cases had been reported to the state department of public health from the county. Of these fourteen occurred in Moline, nine in Rock Island and three in East Moline. Strict quarantine and vaccination measures have been insisted on by state and local public health officials on duty there. Wholesale response to vaccination requirements has been reported.

State Medical Meeting.—At the seventy-fourth annual meeting of the Illinois State Medical Society in Springfield, May 6-8, held under the presidency of Dr. Edward H. Ochsner of Chicago, the following officers were elected for the ensuing year: president, Dr. Lewis C. Taylor, Springfield; president-elect, Dr. Jacob C. Krafft, Chicago; vice president, Dr. John R. Neal, Springfield, and secretary, Dr. Harold M. Camp. Dr. Emmett P. North, St. Louis, gave an address on "The Fake Doctor and the Diploma Mill." Dr. James J. Walsh, New York, delivered the oration on medicine and Dr. Vilray P. Blair, St. Louis, delivered the oration on surgery. The next meeting will be held in Springfield, May, 1925. The delegates were guests of the Sangamon County Medical Society.

Hospital News.—The Moline City Hospital is under quarantine following an outbreak of smallpox in the institution, according to reports. —— Bids will soon be taken for the erection of a $150,000 tuberculosis sanatorium by the board of county commissioners, Joliet.——A nurses' home for the accommodation of fifty nurses will be erected at St. Joseph's Hospital, Joliet. —— The La Grange Sanatorium and Hospital, La Grange, was destroyed by fire, April 19. An ether vaporizing machine which exploded while anesthetics were being administered to two patients being prepared for operation is believed to have caused the conflagration. These patients were removed to another hospital, and the other patients were rescued by firemen.——Seventy patients, ranging from 3 to 30 years of age, were ordered removed from the Cook County Infirmary and Tuberculosis Hospital, Oak Forest, to the state institutions for the feebleminded at Lincoln and Dixon, April 29.

Chicago

Tuberculosis Institute Moves.—The Chicago Tuberculosis Institute announces that it has moved from 8 South Dearborn Street to 360 North Michigan Boulevard. The offices are open to the public as usual.

Hospital News.—A new four-story addition will be erected at St. Bernard's Hospital on South Harvard Avenue.——The Old People's Home on Western Avenue was formally opened to the public, Easter Sunday.

Northwestern Faces Loss.—Northwestern University must obtain $172,318, in pledges, in the next two months, in order to obtain the conditional gift of $600,000 from the General Education Board, it was announced, May 7.

Personal.—Dr. B. Barker Beeson, has been appointed professor and director of the division of dermatology and syphilology, Loyola University School of Medicine.——Dr. Frank Billings was the guest of honor at a meeting of the Wyandotte County Medical Society at Kansas City, Kan., May 7.

Pathologists Elect.—At the annual meeting of the Chicago Pathological Society, May 12, the following officers were elected for the ensuing year: president, Dr. William F. Petersen; vice president, Dr. James P. Simonds, and secretary, Dr. George H. Weaver. The next meeting will be held in October.

Dr. McCormick Adjudged Insane.—According to reports, Dr. Charles McCormick, head of the medical college bearing his name (THE JOURNAL, April 26, p. 1368), was adjudged insane by a commission in Judge Weaver's court, May 5. He was given into custody of Dr. Francis Gerty, superintendent of the Psychopathic Hospital.

Dr. Irons Appointed Dean of Rush.—Dr. Ernest E. Irons, professor of clinical medicine at Rush Medical College, who has been acting dean of students, has been appointed dean of Rush Medical College of the University of Chicago. Dr. Frank Billings, who has been dean of the faculty for the last twenty-five years, has resigned. The two positions—dean of the students and dean of the faculty—will be combined.

University News.—Plans for the merging of Rush Medical College with the University of Chicago have been completed (THE JOURNAL, May 3, p. 1449). Medical work will be organized as follows:

1. The Rush Medical College of the University, which will continue its work as formerly at present, will prepare students for the M.D. degree on its old site on the West Side.
2. The Rush Post-Graduate School of Medicine will be housed with the Rush Medical College in the New Rawson Laboratory on the West Side and will train graduate physicians.
3. The School of Medicine of the University of Chicago will be housed in the new medical buildings and will prepare students for the M.D. degree and higher research. This is now being organized by Dr. Franklin C. McLean and Dr. Dean D. Lewis. When this school is in full operation, it is expected that it will absorb the work of Rush Medical College and the two permanent institutions will be the Rush Post-Graduate School on the West Side and the School of Medicine of the University of Chicago on the Midway.

The new Rawson laboratories, to be erected at a cost of $400,000, will house the graduate department of the school and will be erected on the ground now occupied by the old Rush Medical College building. This building will house the administration offices of the college, the medical library, the departments of occupational therapy, hydrotherapy, pathology and the free dispensary. The Norman Bridge Laboratories of Pathology will occupy the fifth floor. The West Side departments will then include Senn Hall, a research laboratory, and affiliated institutions, including the Presbyterian Hospital, the John McCormick Memorial Institute for Infectious Diseases and the Home for Destitute Crippled Children. The units to be erected at once include the Albert Merritt Billings Memorial Hospital of 200 beds, and the physiologic group. The Billings family donated $1,000,000 for the hospital and Mr. and Mrs. Max Epstein, $100,000 for the Epstein Dispensary. The hospital will house the Billings Library, a gift of Dr. Frank Billings. The new medical buildings for the graduate school of medicine on the Midway will cost more than $3,000,000. All the new structures will be in Gothic architecture to correspond with the other buildings of the university.

KENTUCKY

University News.—The annual week of alumni clinics will be held in Louisville, June 2-7, and the alumni banquet, June 4. President Harmon of Transylvania College will discuss "Medicine a Century Ago." Dr. Haven Emerson, New York City, will speak.

Dr. Emerson Makes Health Survey.—Under the auspices of the Community Chest, Dr. Haven Emerson of New York has begun a health and hospital survey of the city of Louisville. The report will be submitted in the fall to a professional committee representing organized medicine and made up of the state, county and city health officers, the dean of the University School of Medicine and the presidents of the staffs of eight local hospitals.

LOUISIANA

Physician and Sons Acquitted in Narcotic Trial.—The trial of Dr. Francis Fenwick Young and his sons Dr. John D. and A. Laurie Young, charged with the illegal use of narcotics in the Fenwick Sanatorium, Covington, which took place in New Orleans, recently, resulted in the discharge of Dr. John D. Young by the judge before the case went to the jury, and in the acquittal of Dr. Francis F. and A. Laurie Young by the jury within a few minutes.

Carville Leprosarium.—The first of the additional buildings provided by Congress, in February, 1923, to enlarge the National Leper Home at Carville (U. S. Marine Hospital No. 66) has been completed, and twelve lepers temporarily detained elsewhere were moved to Carville, April 4. The appropriation, amounting to $650,000, provides additional beds for about 240 patients and increases the present capacity of the institution to more than 400.

MARYLAND

Joint Meetings to Study Cancer.—The Maryland Cancer Committee gave a dinner, May 9, in Baltimore, in honor of Senator Royal S. Copeland of New York. After the dinner, a joint meeting of the Baltimore City Medical Society, the Baltimore City and the Maryland State Dental Associations and the Maryland Cancer Committee was held at Osler Hall, Medical and Chirurgical Faculty Building. Senator Copeland addressed the joint societies.

Dohme Lectures.—Prof. Julius Stieglitz, Ph.D., chairman of the department of chemistry and professor of chemistry at the University of Chicago, lectured on "Chemistry and Recent Progress in Medicine," May 12, 13 and 14, at Johns Hopkins Hospital, Baltimore. These were the second course of lectures under the Charles E. Dohme Memorial Lectureship, which was founded in 1916, in memory of Professor Dohme. The purpose of the lectures is to promote a more intimate relation between chemistry, pharmacy and medicine.

MASSACHUSETTS

Gifts for Harvard University.—The department of tropical medicine of Harvard University, Boston, has received a gift of $10,000 from Mr. Herman A. Metz of New York for investigations with especial reference to the study and treatment of frambesia. These studies are to be carried out particularly in the Philippine Islands. The department is in receipt also of two other anonymous gifts of $10,000 each, for medical research in connection with tropical medicine.

Revoked Licenses.—Dr. Jacob Schwartz, Boston, whose license to practice medicine was revoked by the state board of registration in medicine, recently, for deceit, malpractice and gross misconduct, has petitioned for a review of the decision of the board. The case was taken under advisement, it is reported.——Dr. Alfred D. Shea, Cambridge, failed to answer a summons to appear in East Cambridge district court, recently, on a charge of practicing medicine after his license had been revoked by the state board of registration in medicine, it is reported. Dr. Shea was convicted some years ago and sentenced to the state prison, but after serving part of his term was pardoned by the governor.

Investigation of Registration Methods.—The Committee on Rules has reported the following resolution for adoption:

Resolved, That a special unpaid commission, to consist of two senators to be designated by the President of the Senate, four representatives to be designated by the Speaker of the House and three other persons to be appointed by the governor with the advice and consent of the Council, shall sit during the recess of the general court for the purpose of investigating every aspect of the organization, practice and procedure of the various divisions of registration in the department of civil service and registration, with particular reference to the methods of examining and registering applicants for examination or registration. The committee shall also consider the subject matter of House Bill No. 223 relative to the practice of midwifery and the registration of midwives; of current House Bill No. 293 relative to the registration of nurses, and of current House bills 746 and 1071, relative to the registration of persons practicing chiropractic.

MINNESOTA

Virulent Smallpox Reported.—Forty-eight cases of virulent smallpox with seven deaths have been reported from Automba according to the health department. St. Louis County reported 134 cases with nineteen deaths and Carlton County has forty-six cases with seven deaths. The public is urged to be vaccinated at once.

MISSISSIPPI

Dr. Leathers Resigns.—Dr. Waller S. Leathers, dean of the University of Mississippi School of Medicine, University, and president of the state board of health, has resigned, to take effect at the termination of the present session. Dr. Leathers has accepted a position with the Vanderbilt University Medical Department, Nashville, Tenn., which will entail his traveling in Europe for the purpose of studying medical education abroad.

MISSOURI

Illegal Practitioner Sentenced.—"Dr." Ernest Behagen, East St. Louis, Ill., according to reports, was sentenced, April 24, in St. Louis, to one year in the workhouse and to pay a fine of $500. He was found guilty of practicing medicine without a license (THE JOURNAL, April 5, p. 1129).

Alexander's Case Dismissed.—Charges of conspiracy against the public health brought against Dr. Date R. Alexander, following the exposé by the St. Louis *Star* of illegal licensing of physicians (THE JOURNAL, February 2, p. 398), were dismissed in Kansas City, April 28, according to reports.

Chiropractors Arrested.—Two chiropractors were arrested in Cape Girardeau County, J. L. Bruce at Cape Girardeau and F. H. Statler at Jackson, on grand jury warrants charging them with practicing medicine without a license, and were released on bond. Another chiropractor named Dale was also arrested and is out on bond. A woman chiropractor was fined in the circuit court at Jackson some time ago and left the county.

Missouri State Medical Association.—At the sixty-seventh annual meeting of the association in Springfield, May 6-8, Dr. William A. Clark, Jefferson City, was elected president; Drs. Clarence B. Francisco, Kansas City, Dr. Homer L. Kerr, Crane, Edward C. Shelton, Eldon, Elbert L. Spence, Kennett and Jules M. Brady, St. Louis, vice presidents; Dr. Edward J. Goodwin, St. Louis, secretary, and Dr. J. Franklin Welch, Salisbury, treasurer (both reelected). The 1925 meeting will be held in Kansas City.

Kansas City Clinical Society.—The annual fall clinical conference will be held in Kansas City, October 13-18. Among the speakers will be Secretary of Commerce Herbert Hoover; Dr. Elliott P. Joslin, Boston; Dr. Frederick N. G. Starr, Toronto, Can.; Dr. Rudolph Matas, New Orleans; Dr. Oliver H. P. Pepper, Philadelphia; George E. Vincent, president of the Rockefeller Foundation; Surg.-Gen. Hugh S. Cumming, U. S. Public Health Service, and Surg.-Gen. Merritte W. Ireland, U. S. Army.

NEBRASKA

Physician Guilty.—Dr. George L. Wagner, Deshler, was recently found guilty of violating the Harrison Narcotic Law in the federal court at Hastings.

Personal.—Dr. Russel J. Murdock was recently elected mayor of Blair.——Dr. Charles P. Crudup, Nebraska City, was recently reelected president of the Chamber of Commerce.

Hospital News.—The new West Nebraska Hospital, Scottsbluff, was dedicated, April 13.——Dr. Charles W. Pollard, Omaha, has become sole owner of the Stewart Maternity Hospital on St. Mary's Avenue.——The Fraternity Hospital, Tekamah, for several years conducted by Drs. Isaiah Lukens and Henry A. Johnson, has passed to the control of Dr. Wren Morrow and his brother, Dr. Lawrence Morrow.

NEW YORK

Memorial Research Laboratory Opens.—The John Rogers Hegeman Memorial Research Laboratory at the Sanatorium of the Metropolitan Life Insurance Company, Mount McGregor (near Saratoga Springs), will be dedicated, May 22.

Smallpox Closes Schools.—Three district schools have been ordered closed in New Southfield, a rural community fourteen miles south of Ithaca, because of an outbreak of smallpox. The township health officer states that about twenty cases have been reported and that they are all mild.

Hospital News.—The Nassau Hospital Association will launch a drive for $420,000 between June 4 and 14. This institution is entirely maintained through private donations. The Nassau County Medical Society will hold a special meeting, May 19, to consider means whereby the society can cooperate in making the campaign a success.

State Health Workers Meet.—Public health workers from fifty-four counties attended the annual conference of the state committee on tuberculosis and public health of the State Charities Aid Association at the Hotel Biltmore, New York, May 2. George F. Canfield presided. Dr. William H. Park, president of the American Public Health Association, gave an address.

Association of Public Health Laboratories.—The eighth annual meeting of the New York State Association of Public Health Laboratories was held in Rochester, April 22. The following officers were elected: president, Dr. Walter S. Thomas, Clifton Springs Sanitarium Laboratory; vice president, Dr. Victor C. Jacobson, Albany Hospital Laboratory, and secretary-treasurer, Mary B. Kirkbride, laboratory, state department of health, Albany.

New York City

Chiropractor Refused Jury Trial.—Supreme Court Justice Carswell, Brooklyn, May 5, denied the application of Mrs. Lillian Edwards, a chiropractor, for a jury trial of the charge against her of practicing medicine without a license.

Smallpox on Liner.—A first-class passenger on the United States liner *President Roosevelt*, arriving May 11 from Southampton, died of smallpox and was buried at sea, May 8. Ninety of the first-class passengers were vaccinated before the vessel was allowed to pass quarantine.

Bust of Dr. Louria Unveiled.—A bronze bust of the late Dr. Leon Louria, who died in August, 1923, was unveiled at the Jewish Hospital, Brooklyn, May 10. Dr. Benjamin Koven made the presentation speech and Dr. John O. Polak of Long Island Hospital College gave an address.

Faker Gets Five Years in Sing Sing.—According to reports, Frank Kronengold, a "doctor of neuropathy," was sentenced to five years in Sing Sing Prison, May 7, by Judge Mancusó; he pleaded guilty to obtaining $25,000 under false pretenses from prospective brides. Kronengold previously spent a year at the Elmira Reformatory.

Children's Welfare Federation.—At its twelfth annual meeting in the New York Academy of Medicine, May 8, the Children's Welfare Federation reported that 6,217 children's cases and 31,812 maternity cases were cared for last year through its 294 organizations. Thomas S. McLane was elected president to succeed Dr. Henry Dwight Chapin, and Dr. Sara Josephine Baker was reelected honorary president.

Annual Report on Henry Street Settlement Work.—The report for 1923 of the Henry Street Nursing Service gives a detailed statement of the work accomplished by the organization since its foundation thirty years ago. The original staff of two nurses has expanded to more than 250, and from a mere local body its activities now extend throughout Manhattan, the Bronx and Richmond. Altogether 11,496 women and 9,450 new-born children were nursed during the year covered by the report. The total number of children under five years of age attended by the Henry Street Nurses last year was 15,727. The settlement maintains three country homes for children, and in addition gives single day trips for city mothers and their children. The total income of the organization last year was $366,414, whereas the total expenditures amounted to $450,881. On the basis of these figures the report states that $150,000 a year more is needed.

Hospital Day Contributions.—In the observance of National Hospital Day and the anniversary of the birth of Florence Nightingale, the $525,000 which had been collected during the last year was distributed among the fifty-six hospitals of the city which are members of the United Hospital Fund. The hospitals receiving the largest amounts were:

Mount Sinai	$41,839
St. Luke's	30,297
Presbyterian	21,410
New York	21,151
Lenox Hill	16,448
Roosevelt	12,219
Lincoln	15,045
Post Graduate	11,628
Beth Israel	10,502
Lebanon	10,450
Lying-in	17,850
Sloane	12,069
Women's	11,183
Nursery and Child's	10,016
Orthopedic	22,918
Ruptured and Crippled	10,611
Montefiore Home	52,500
Home for Incurables	10,467
Long Island College Hospital	18,219

Personal.—Dr. William F. Snow of New York has been appointed chairman of a special commission on white slavery by the Council of the League of Nations, as a representative of the American Social Hygiene Association. He has gone to Europe to take up his new duties.——Dr. Emil Mayer was the guest of the Iowa State Medical Society, May 8, at Des Moines. He spoke on "The Study of Affections of the Nose and Throat with Special Reference to the Diagnosis of Affections in Other Parts of the Body."——A testimonial dinner was given to Dr. Robert J. Carlisle by the alumni association of Bellevue Hospital Medical College at the Hotel Biltmore, May 3. Dr. Carlisle was recently appointed head of the department of medicine at the medical college.——Dr. William Garvin, for ten years superintendent of the Kings Park (N. Y.) State Hospital, has been transferred to the superintendency of the Bingham State Hospital. Dr. Garvin will be succeeded by Dr. Mortimer W. Raynor, who has been first assistant at the Manhattan State Hospital.——At the meeting of the section on neurology and psychiatry of the New York Academy of Medicine, May 13, Dr. Otto Rank of Vienna will speak on "The Essence of Psychanalytic Therapy," and Professor A. Jakob of Hamburg will read a paper on the "Anatomic Relations, Clinical Syndromes and Physiology of the Extrapyramidal System."——A dinner was given for George P. LeBrun, May 5, in recognition of his twenty-five years' continuous service as secretary of the medical examiners' office and the "old coroners' office."——Dr. Charles G. Heyd was the guest of the Ohio State Medical Society, May 15, and delivered the oration in surgery.

NORTH CAROLINA

State Prison Sanatorium.—The contract has been let for the erection of the first state prison sanatorium for the treatment of tuberculosis. The last legislature voted $50,000 for the erection and $37,500 for the maintenance of the institution. It will be built near the present State Sanatorium, at Sanatorium, and will be under the same supervision. It will be four stories high. All tuberculous prisoners in the state penitentiary, county jails and on the county roads will be sent to the institution.

OHIO

Chiropractors Fined.—Fines of $50 and $150 were assessed against ten chiropractors who appeared before Judge Powell in Dayton, April 23, for practicing without licenses from the state medical board. For the first appearance a fine of $50 was given; for the second offense, $150.

France Honors Lakeside Unit.—In honor of the Lakeside Hospital Unit of Cleveland, the first detachment of the American Expeditionary Forces to arrive in France, a monumental bronze tablet will be dedicated by the French government, at Rouen, France, May 25, where the unit landed May 25, 1917. Drs. William E. Lower and Henry L. Sanford of the hospital unit have been selected to attend the dedicatory ceremonies.

OKLAHOMA

Society News.—The Creek County Medical Society entertained the physicians of Payne County at a banquet, May 1, at Drumright.

State Health Exposition.—Dr. Roscoe C. Baker, superintendent of health, organized a state health exposition in Enid, May 7-10. Sanitation, disease prevention, food demonstrations and better baby contests comprised the exhibitions.

Physicians' Licenses Revoked.—The licenses of Drs. N. J. Hamilton and Howell B. Gwin of Tulsa, who were before the board of medical examiners in April (THE JOURNAL, April 26, p. 1370), have been revoked for alleged unethical practice, the board announces. Both physicians have given notice of appeal before the courts.

OREGON

Society News.—The Oregon State Medical Society will celebrate its fiftieth anniversary at Portland, May 27-28.——At the annual meeting of the Clatsop County Medical Society in Astoria, March 25, Dr. Arthur VanDuzen was elected president, and Dr. Ernest N. Neulen, secretary-treasurer. Dr. Edward B. McDaniel, president of the state medical association, gave an address.

PENNSYLVANIA

Diphtheria Kills Cultists.—Diphtheria is on the increase among members of the Faith Tabernacle, Lebanon, who have refused to permit physicians to treat their sick. Seven of the congregation have died, and fifty are seriously ill, it is reported.

Annual Clinic.—The third annual medical and surgical clinic of the Westmoreland County Medical Society was held in Greensburg, May 15, with Dr. John B. Deaver and Dr. David Riesman of Philadelphia in charge. A testimonial dinner was given in the evening when the Philadelphia physicians gave an address. Dr. Walter M. Bortz, Greensburg, was elected president of the Westmoreland County Medical Society and Dr. Carroll B. Rugh, New Alexandria, secretary-treasurer.

TENNESSEE

Physician Charged with Fraud.—According to reports, Dr. Charles W. Baker, Rossville, was arrested, April 21, by the federal authorities on a charge of misuse of the mails in connection with the alleged collection of fraudulent claims from the Woodmen of the World. He is alleged to have secured several thousand dollars from the home office of the order on fraudulent claims to permanent disability of members of the Rossville camp, of which he was until recently, physician.

VIRGINIA

Chair of Nursing to Be Endowed.—The Graduate Nurses Association of Virginia has undertaken to raise $50,000 to endow a chair of nursing at the University of Virginia Medical School, Charlottesville. Two courses are planned, one for graduate students; the other for undergraduates.

WISCONSIN

Drs. Jermain and Boorse Honored.—The senior members of the medical class of Marquette University Hospital, Milwaukee, presented Drs. Louis F. Jermain, dean, and Lorenzo Boorse, head of the department of pediatrics, with a silver loving cup each, May 2. Both Dr. Jermain and Dr. Boorse have completed thirty years of teaching on the faculties of Marquette University School of Medicine, the Milwaukee Medical School or the College of Physicians and Surgeons.

WYOMING

New Appointments.—Dr. John H. Goodnough, Rock Springs, has been appointed health officer of Sweetwater County to succeed Dr. Durward B. Park, who removed from the city. ——Dr. Charles E. Fish, Wheatland, has been appointed health officer of Platte County.

PHILIPPINE ISLANDS

Report of Leprosarian.—The annual report of the chief of the Culion Island leper colony shows an increase of 213 inmates in 1923; there were 5,445 lepers confined on the island, Dec. 31, 1923, of these 2,697 were men, 1,440 women, 802 boys and 506 girls.

CANADA

Hospital News.—For the last few days the Montreal General Hospital has had to refuse emergency cases on account of overcrowded conditions. According to Dr. A. H. Haywood, superintendent, the hospital is filled to capacity, and has a daily waiting list of over 300 patients. Dr. Haywood states that in the last ten years Montreal has increased its population by about 300,000, and not one hospital bed has been added.

Personal.—Drs. Oscar F. Mercier and Télesphore Parizeau of Montreal, and Drs. A. Alfred Simard and Simeon E. Grondian of Quebec were recently elected corresponding members of the Société de Chirurgie at Paris.——Dr. Piette, rector of McGill University Faculty of Medicine, Montreal, and Drs. Louis L. Harwood, Télesphore Parizeau and Henri Baril, at the invitation of the Rockefeller Institute, will visit various universities in the United States.

Medical Insurance Fees.—The Canadian Medical Association has gone on record for the last two years as in favor of a minimum flat fee of $5 for physicians to receive for an insurance examination and reporting same to the insurance company. The secretary therefore took this matter up with the various insurance companies doing business in Canada. Those companies which replied pointed out that their tariff did not permit paying $5 for examinations and that they had had no difficulty in finding physicians willing to make examinations for the fees paid by them.

GENERAL

Drs. Dick and Dochez Honored.—The Association of American Physicians in session at Atlantic City, N. J., May 7, awarded lectureship prizes to Dr. George F. Dick of Chicago and Dr. Alphonse R. Dochez of New York for their work in connection with scarlet fever.

Society for Experimental Biology and Medicine.—At the twenty-first annual meeting of this society at the College of the City of New York, April 16, Holmes C. Jackson, Ph.D., was elected president; Dr. James W. Jobling, vice president, and Dr. Victor C. Myers, secretary-treasurer.

Medical School Recognized.—A letter from the secretary of the Oklahoma Board of Medical Examiners, reports that the Eclectic Medical College of Cincinnati is on the list of institutions approved by that board. This will correct the information reported in Table D published in the state board statistics.

Association of American Physicians.—At the annual meeting of the association in Atlantic City, N. J., May 6-7, Dr. Lewis A. Conner, New York, was elected president succeeding Dr. Charles F. Martin, Montreal, Canada. Dr. Richard P. Strong, Boston, was elected vice president and Dr. Thomas McCrae, Philadelphia, secretary (reelected).

Mrs. Work Dies Suddenly.—Mrs. Hubert Work, wife of the Secretary of the Interior and former president of the American Medical Association, died suddenly, May 9, of angina pectoris while taking an automobile ride. Mrs. Work is survived by two sons and a daughter and her husband. All immediate social functions at the White House were canceled.

Red Cross Relief Work.—The division directors of disaster relief of the American Red Cross held a meeting the last week in April at Washington, D. C., to perfect a standard plan to carry on disaster relief work more efficiently. The plan involves the cooperation of the army, the navy and the post-office air services, when possible, to insure speed in sending relief personnel and supplies.

Medical Woman's International Association.—Dr. Esther C. P. Lovejoy, New York, president of the Medical Woman's International Association, and Lady Florence E. Barrett, president of the Medical Woman's Federation of Great Britain, invite all women physicians who are members of the American Medical Association to their conference in London, England, July 15-18. Special excursions to Europe will be made at reduced rates.

National Tuberculosis Association.—The twentieth annual meeting of the National Tuberculosis Association was held at Atlanta, Ga., May 7-10, under the presidency of Dr. Livingston Farrand of Cornell University, New York. Dr. Charles J. Hatfield, Philadelphia, was elected president for the ensuing year; Dr. George M. Kober, Washington, D. C., secretary, and Dr. H. B. Platt, New York, treasurer. Dr. James A. Britton, Chicago, was named a member of the executive committee.

Hearing on Birth Control Bill.—Proponents and opponents of the Cummins-Vaile bill, which would permit the sending of birth control literature through the mails, were heard in a second meeting on this subject by the House Committee on Judiciary, May 9. Miss Sarah E. Laughlin, Philadelphia, of the Alliance of Catholic Women; Mrs. George P. Scriven, of the Washington Council of Catholic Women, and others appeared. They argued against circulation of birth control literature. Mrs. Mary Ware Dennett, director of the Voluntary Parenthood League, declared that the present laws on the subject were infringements of liberty.

Bill for Medical Research Bureau in Interior Department.—A bureau of medical research, to be established in the Department of the Interior, is provided in a bill introduced by Senator R. S. Copeland of New York. This bureau would investigate the chemical and biologic processes that underlie the functioning of the organs of the human body. The bureau would be required "to devise means of controlling the bodily processes, to determine the physical properties of materials where a knowledge of these materials may be of advantage to medical science." The bill contains an elaborate program for the purchase of a 100-acre tract of land in the vicinity of Washington, D. C., on which buildings shall be erected at a cost of not more than $1,000,000.

British Association for the Advancement of Science.—The ninety-second annual meeting of the British Association for the Advancement of Science will meet August 6-13 in Toronto, Canada. This association, founded in 1831, meets annually for a week or longer at important centers of the British empire other than London, England. Three previous meetings have been held in Canada in 1884, 1897 and 1909; the meeting in 1905 was in South Africa, that in 1914 in Australia. The average attendance at these meetings for the eighty-three years previous to 1920 was 2,330. There is no technical qualification required of applicants for admission as members of the association and no limitation in respect to nationality. A preliminary program will be forwarded on application to the local secretary, British Association, Physics Building, University, Toronto.

Plague and Smallpox.—According to the official report of the health section of the League of Nations, Geneva, from January 13 to February 8, 22,782 cases of plague were reported from British India, with 17,432 deaths; 1,064 deaths were recently reported from Java, and Madagascar had 301 cases of plague, with 276 deaths, in a month.——According to this report, in the three weeks ending March 1, there were 3,341 cases of smallpox reported in the United States, and 3,423 during the three previous weeks. The average weekly incidence for the three weeks ending March 1 in the five states most affected was as follows: California, 281; North Carolina, 171; Michigan, 158; Georgia, 130, and Indiana, 73. ——The severe epidemic of smallpox in Hongkong continues. From February 10 to March 8,220 cases with 217 deaths were reported, and since November there have been 1,323 deaths from the disease. In England and Wales 337 cases were reported during the month of March.

No Reduction in Tax for Medical Bills.—Deductions in income tax returns on account of physicians', nurses' and hospital bills will not be permitted, as a result of the action taken by the Senate in refusing to adopt the amendment on

this subject presented by Senator R. S. Copeland of New York. When the section of the tax bill on deductions from net income was being considered a few days ago in the Senate, Senator Copeland argued that since deductions were allowed for all ordinary losses incurred in any trade or business or for fire or theft, a special provision should be added to the bill permitting the person who has incurred expense for hospital care or treatment from a physician to make deductions for such expense. Dr. Copeland's amendment applied particularly to persons who because of extreme ill health incur large expense for treatment. After a brief discussion, in which Senator Smoot indicated his objections to the proposal, the Senate rejected the amendment without a roll call.

Bill for Prohibition Bureau Favorably Reported.—A bill to create a separate Bureau of Prohibition in the Treasury Department has been favorably reported to the House of Representatives. The measure would bring into one unit of the department all activities of every character on the subject of prohibition and narcotics. It includes the Treasury Department unit which now has in charge the administration of the Harrison Narcotic Law. The bill creates, within the proposed Bureau of Prohibition, a division of industrial alcohol and chemistry, the head of which shall be a graduate chemist and a person of knowledge and experience in the manufacture, distribution and industrial uses of ethyl and denatured alcohol. Such chemist shall be appointed by the Secretary of the Treasury, with an annual salary of $7,500. This division of industrial alcohol and chemistry shall administer the manufacture, distribution and sale of ethyl and denatured alcohol in such a manner as to insure an ample supply and promote the use of nonbeverage alcohol in scientific research and in the development of lawful industry.

Testimonial Banquet to Dr. George H. Simmons

In recognition of the long and valuable service to scientific medicine of Dr. George H. Simmons, for twenty-five years Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, the undersigned committee of physicians is arranging for the painting of his portrait and a testimonial presentation dinner to be held in the Congress Hotel, Chicago, Monday evening, June 9, at 6:30 o'clock. Special invitations have been issued to officers of leading medical organizations. It is desired to invite also all Fellows of the American Medical Association, educators and scientists who may wish to join in this recognition of Dr. Simmons' service. In order to provide adequately for those expecting to attend, reservations should be made promptly. The cost will be $10 per plate. Checks should be sent to Dr. Ludvig Hektoen, 637 South Wood Street, Chicago, before June 5.

GEORGE BLUMER, New Haven, Conn.,
HUGH SMITH CUMMING, Washington, D. C.,
HARVEY CUSHING, Boston,
JOHN BLAIR DEAVER, Philadelphia,
GEORGE DOCK, Pasadena, Calif.,
CHARLES PHILLIPS EMERSON, Indianapolis,
SEALE HARRIS, Birmingham, Ala.,
LUDVIG HEKTOEN, Chicago,
CHARLES FRANKLIN HOOVER, Cleveland,
MERRITTE WEBER IRELAND, Washington, D. C.,
DONALD MACRAE, JR., Council Bluffs, Iowa,
RUDOLPH MATAS, New Orleans,
CHARLES HORACE MAYO, Rochester, Minn.,
HARVEY GILMER MUDD, St. Louis,
HENRY SEWALL, Denver,
GEORGE DAVID STEWART, New York,
EDWARD RHODES STITT, Washington, D. C.,
HOLMAN TAYLOR, Fort Worth, Texas,
WILLIAM SIDNEY THAYER, Baltimore,
VICTOR CLARENCE VAUGHAN, Ann Arbor, Mich.,
JOHN ALEXANDER WITHERSPOON, Nashville, Tenn.

FOREIGN

More Quinin for Greece.—Five tons more of quinin have been ordered by the American Red Cross for shipment to Greece. This will make the total amount 14,000,000 tablets and the cost $86,000.

The Kant Bicentennial and the University of Königsberg.—The Germans are planning to honor the two hundredth anniversary of the birthday of Immanuel Kant this year. The special feature of the tribute to Kant is to be donations of money and books to the University of Königsberg, where he was appointed to the chair of philosophy in 1770. He was born at Königsberg, April 22, 1724.

Prize for Work on Infant Feeding.—The Italian Felix Mantovani Foundation offers four prizes ranging from 500 to 2,500 lire for the best monographs published in 1924 on the physiology and pathology of infant feeding. Candidates are to send three copies of their monograph to the president of the Italian Pediatric Society, Hospital A. Meyer, 115 via Mennelli, Florence, before Dec. 31, 1924.

Gift for Disease Prevention.—An anonymous gift of $50,000 has been received by the Royal Society for the Prevention of Disease, London, for the relief of suffering, with special attention to tropical diseases in British possessions and to cancer and tuberculosis. The society was also the recipient of $2,500 from Brunner, Mond and Company, to be used for the publication of the results of scientific research in medicine, chemistry and physics.

Royal Medical Benevolent Fund.—At the annual meeting, recently, Sir Thomas Barlow was reelected president. Annuities were paid to 162 persons (physicians, their widows and dependents). Six hundred new subscribers were added to the fund during the year. The War Emergency Fund (about $180,000), which was organized to assist physicians who lost their practices through the World War, is practically exhausted, it was announced.

Foreign Society News.—The much postponed International Congress of Comparative Pathology, which was to have been held in Rome, April 27-May 3 (THE JOURNAL, March 1, p. 727), has been postponed until next October.——The eighty-eighth Congress of German Natural Science and Medicine will be held at Innsbruck, September 21-26, under the presidency of Profs. E. Ritter von Schweidler and Karl Haberer. ——The third International Congress of Military Medicine and Pharmacy will be held in Paris in May, 1925. Inspector-General Vincent will preside.——The annual congress of the German Orthopedic Society will be held in Graz, September 15-18, with Prof. A. Wittich in the chair. The relation of orthopedics to other branches of medical science will be the subject of discussion.——The Society of Eugenics has been founded at Graz with Dr. Rudolf Polland, professor of dermatology at the University of Graz, as president.

New Zealand Branch of British Medical Association.—The annual conference of the New Zealand Branch of the British Medical Association met at Auckland, New Zealand, Feb. 29-March 6, 1924, with Dr. F. G. Gibson as retiring president and Dr. Carrick Robertson as president. His excellency the Governor General Admiral Jellicoe of Scapa Flow formally received the members and their wives at the government house, and preceding the meeting gave a dinner to the foreign delegates and New Zealand officials. Sir John L. Thomas was the delegate from England. This was the first conference with separate meetings for the sections of medicine, surgery, and eye, ear, nose and throat. Guests from the United States attending the conference included Drs. William J. Mayo, Rochester, Minn; Franklin Martin, Chicago; Thomas Hubbard, Toledo, Ohio; Francis P. Emerson, Boston; Richard H. Harte, Philadelphia, and Richard R. Smith, Grand Rapids, Mich. Dr. Mayo addressed the conference on "The Splenomegalias," and Dr. Martin on "Hospital Administration." Dr. Hubbard addressed the eye, ear, nose and throat section on "Bronchoscopy and Oesophagoscopy and Some Diseases of the Oesophagus," and Dr. Emerson on "Is Chronic Progressive Deafness a Rhinological or Otological Problem?" The next meeting of the conference will be held in Dunedin in 1926. Dr. L. E. Barnett of Dunedin was elected president. Among other interesting features of the meeting was a trip to the land of the Maori, a native polynesian tribe, who participate in the government of New Zealand, and who gave the delegates a formal Maori reception.

Deaths in Other Countries

Dr. **John S. MacKay,** formerly of Rio Tinto, Spain, and at one time assistant professor of surgery at the University of Edinburgh, in Scotland, recently.——Dr. **P. Aaser,** director of the Norwegian State Serum Laboratory, Christiania, Norway. ——Dr. **Frederick W. Higgs,** medical officer to the ministry of health, London, March 26.——Dr. **Francis J. Bell,** former professor of comparative anatomy, Kings College, London, aged 70.——Dr. **Ricardo Pérez Minguez,** Madrid, in charge of the medical section of the war department.——Dr. **Brandenburg,** at Herat, the third member to succumb of the party of seven German physicians who left last year in response to the appeal of the authorities in Afghanistan. Nearly all of the party contracted malaria during their journey across Russia and Turkestan and several had dysentery and typhus in addition; two of the four women in the party, which

totaled eleven persons, died.——Dr. **Charles Jacobs,** aged 63, founder and long president of the Belgian Société de Gynécologie and organizer of the international congresses on gynecology and obstetrics, the first meeting at Brussels in 1892. During the World War he was director of a hospital for refugees at London.——Dr. **Arnold Pick,** professor of psychiatry and neurology at the German University of Prague since 1886, aged 75.——Dr. **V. Hensen,** emeritus professor of physiology at the University of Kiel, aged 89.——Dr. **C. H. Stratz** of The Hague, author of works on gynecology, aged 61.——Dr. **G. Demetriade,** professor of dermatology at Jassy.——Dr. **R. E. Leone,** assistant professor of internal medicine at Naples.——Dr. **W. Lukasiewicz,** professor of dermatology at Lemberg.

CORRECTION

Veterans' Compensation.—THE JOURNAL stated (Feb. 16, 1924, p. 558) that the status of former service men who are given compensation rating after their disability is determined cannot be changed without the approval of the central board of appeals and the director of the Veterans' Bureau. It might be wrongly inferred from this statement that a compensation rating cannot be changed, when once determined, without the approval of the director in Washington, D. C. Districts may change the rating of a claimant's disability on which his compensation is based; but once the disability of a former service man has been connected with the service and he has received compensation, such disability shall not be rated as not of service origin subsequent to the expiration of the time allowed for appeal (four months) except on approval of the director.

Government Services

Authorization of Hospital Revoked

Authorization for the organization of Surgical Hospital No. 16 as the Southern Pacific Hospital Unit, Houston, Texas, issued, Dec. 5, 1922, has been revoked.

Authorization of Hospitals

Pursuant to instructions of the Secretary of War, the organization of the following hospitals, organized reserves, has been authorized: Surgical Hospital No. 65 (University of California Medical School Unit, San Francisco); General Hospital No. 30 (University of California Medical School Unit, San Francisco); General Hospital No. 79 (The Long Island College Hospital Unit, Brooklyn), and Evacuation Hospital No. 66 (Mercy Hospital Unit, Des Moines, Iowa).

Legislation for Veterans' Bureau

A draft of a bill to reorganize the medical personnel of the Veterans' Bureau was recently transmitted by Director Frank C. Hines to the committee on World War veterans of the House of Representatives. The measure proposed to eliminate present inequalities of the medical corps and contained provisions which would improve the efficiency of the medical section. When a survey of Congress was made, however, it became apparent that it would not be possible to secure the passage of the measure at this session. Accordingly, the bill was not introduced. The only legislation affecting the medical section of the Veterans' Bureau that is scheduled to pass now is contained in minor provisions of the bill to codify existing laws relating to the Veterans' Bureau. This bill passed the Senate, May 6. It permanently transfers to the Veterans' Bureau all hospitals now under the jurisdiction of the Public Health Service, the control of which had heretofore been transferred to the Veterans' Bureau by the President. It contains another provision to the effect that "for administrative and disciplinary purposes, physicians of the Public Health Service, detailed to the Veterans' Bureau, shall be under the exclusive control of the director of the Veterans' Bureau." It extends the period to five years after discharge in which tuberculous and neuropsychiatric diseases will be presumed to have developed as a result of war service; it permits tuberculous patients to go to their homes after one year in hospitals and hold "permanent total disability ratings for three years."

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 21, 1924.

Criminal Responsibility

Lord Darling has introduced into the House of Lords a bill to amend the law of criminal responsibility, which is likely to become law. Section 1, Subsection 1, provides that a person is not responsible for an act or omission charged against him as a crime if, at the time, he is proved to be suffering from such a state of mental disease as deprives him (*a*) of capacity at the time to know, understand and appreciate the physical nature and quality of the act done or omission made; or (*b*) of capacity to know, understand and appreciate that the act done or omission made was wrong. This would transform into a statute the rule laid down by the judges in the McNaghten case which has so long governed legal practice. But the view persistently advocated by psychiatrists, though opposed by judges, that a person may fulfil neither of these conditions and yet be irresponsible in consequence of "uncontrollable impulse," is now recognized. The bill states that "if, at the time the act was done or omission made he [the prisoner] was suffering from such a state of mental disease as therefrom to be wholly incapable of resisting an impulse to do the act or make the omission," he is not responsible to the law. The words "wholly incapable" are important, and clearly exclude, as a defense, mere weakening from mental disease of the power to control an impulse. A point raised in the McNaghten case as to the weight to be given to delusions in determining responsibility is thus dealt with: "A person who is suffering from mental disease at the time of doing the act or of making the omission charged against him as a crime, and by reason of such mental disease, is affected by delusions on some specific matter or matters, but whose mental condition does not render him irresponsible to the law within the meaning of Subsection 1, is responsible for such act done or omission made to the same extent as if the facts with respect to which such delusions exist were real." In the McNaghten case, the judges held that, "notwithstanding the party did the act complained of with a view, under the influence of insane delusion, of redressing or revenging some supposed grievance or injury, or of producing some public benefit, he is nevertheless punishable according to the nature of the crime committed, if he knew at the time of committing such crime that he was acting contrary to law." Section 2 substitutes a verdict of "not guilty on the ground of insanity" for that of "guilty but insane," the present formula. This change has often been advocated on the ground that it is illogical to declare a man guilty and at the same time absolve him from the consequences of an act for which guilty intent is essential.

Women in Medicine: The Jubilee of the London School of Medicine for Women

The London School of Medicine for Women (Royal Free Hospital) celebrates its jubilee this year. When it was founded, in 1874, no professional training of any kind was open to women. There were some women's colleges, but they were not university colleges, and no degrees were open to women in this country. However, when the first British medical register was created, in 1858, the name of an Englishwoman appeared on it, Dr. Elizabeth Blackwell, who had qualified not in this country, which was then impossible, but in the little University of Geneva in the state of New York. Not until 1865 was added the name of an Englishwoman who had qualified in this country, that of Elizabeth Garrett (later Mrs. Garrett Anderson). The London School of Medicine

for Women was founded by the energy and determination of Sophia Jex-Blake, the leader of seven women students who went to Edinburgh, in 1869, in the hope of obtaining admission to the famous medical school. After four years of struggle, their admission was definitely refused. So they came to London, where already Dr. Garrett Anderson had started the New Hospital for Women. Medical qualifications were then rapidly thrown open to women, and when, in 1879, the University of London decided to throw open its degrees to women, it was largely influenced by the fact that there were fully trained medical women and a medical school for women of university standard. In 1876, the Royal Free Hospital united with the London School of Medicine for Women, and the union resulted in a school of high standing which has now a graduate roll of more than 1,000 members. Its former students are working all over the world. During the last six months, more than sixty appointments have been obtained by former students of the school in various hospital and public positions at home and abroad.

The British Medical Service in the War

The third volume of "The Official Medical History of the Great War" has just been published. Like its predecessor, it is the work of Major General Sir W. G. Macpherson, the editor-in-chief of the whole series. It has been compiled from the war diaries and official dispatches, supplemented by information from medical officers. Some of the figures are startling in their magnitude and show a strain on the medical organization without parallel in previous wars. In the battle of the Somme, in 1916, between July 1 and November 30, no fewer than 316,073 casualties were admitted to the field ambulances of the Third, Fourth and Fifth armies. No. 29 Casualty Clearing Station at Gezaincourt received as many as 5,346 casualties in one day, and 11,186 in the first three days of the offensive. Yet, in spite of these colossal figures—the largest in any period of the war—"the medical services stood the strain with persistent cheerfulness and undiminished vigor, and very soon the machinery was working almost automatically." During the battle of Arras, the physical features of the country were turned to useful account by Col. H. N. Thompson, deputy director of medical services of the Sixth Corps. He used as a dressing station a large subterranean cave from which stone had been excavated for the building of Arras in the sixteenth century. Inlets for stretchers were tunneled into it from the communication trenches. It was given the name of "Thompson's Cave" and was fitted with electric light and a piped water supply to accommodate 700 wounded. Unfortunately, a large shell exploded on the top of the cave and burst the water main, causing the roof to fall in in two places. Though no casualties were incurred and it had thus fulfilled its purpose, it was impossible to continue to use it. A great advance was made during the protracted battle of Ypres, in 1917, by arranging for increased operative surgery in the casualty clearing stations in the front areas. Among other results, this had the valuable one of practically getting rid of gas gangrene, which had been such a scourge in the earlier years of the war. In this volume is also included an instructive account of the medical services on the Italian front, in Egypt, in the Sinai Peninsula and in Palestine. In spite of anticipations to the contrary, the health of the troops during the operations in the Sinai Peninsula was remarkably good. One of the most important causes contributing to this result was an ample supply of sterilized water brought along a waterless desert from Egypt by 12-inch pipes.

Another Plague Epidemic in India

Once more the people of the Punjab have to endure an epidemic of plague. The latest available statistics show that, during the week ending April 5, 9,000 deaths from plague have occurred. Owing to the severity of the outbreak, the Punjab government has ordered the closing of all courts. Panic prevails in the city of Lahore, where forty deaths are occurring daily. Many houses are deserted, and the more prosperous classes have removed to healthier localities. Vigorous measures are being taken by the public health department, and disinfection and inoculation are being carried out on an extensive scale. The number of rats destroyed exceeds 30,000. Segregation camps of brick huts have been erected outside the city. Over the greater part of India, the population during the last four years has come to regard plague as a thing of the past. Only in the Punjab does it recur each spring to remind the country of its existence. The disease has now weighed heavily on this province since 1900, and in the worst seasons the results have been calamitous. In 1906, the deaths in the Punjab rose to 675,000. Since 1900, the Punjab has lost 3,000,000 persons out of a total for the whole of India amounting to 10,250,000. The appearance of plague in India was first announced in Bombay in September, 1896. Within a month, frightened crowds were fleeing from the city, and by the end of the year the population had fallen by 150,000, and the fugitives had carried disease to every corner of the presidency. The health authorities have waged a vigorous campaign, which would have been more successful but for the ignorance and prejudices of the people.

Death from Cardiac Inhibition During Boxing

At a recent meeting of the Medico-Legal Society, Dr. P. B. Spurgin reported the case of a strong young man who died suddenly after a fist fight without any lesions being found post mortem to account for death. The necropsy showed a well built, extremely muscular man. There were a small contusion on the center of the forehead, one on the left angle of the jaw, one over the inner end of the left clavicle, several small marks on the left clavicular region, a faint mark over the right edge of the sternum, two faint bruises over the outer side of the left nipple, and abrasions over two metacarpals. The skull and brain were normal. The left auricle and both ventricles were firmly contracted and empty. The heart muscle was pale, and the valves were normal. The lungs were congested, but otherwise normal. The other organs were normal. Thus, there was nothing to account for the death, but the condition of the heart pointed to sudden inhibition, probably due to direct irritation of the vagus nerve by blows above the left clavicle.

The Leprosy Problem

In an address on the leprosy problem of the British Empire at the Royal Colonial Institute, Lieut. Col. Sir Leonard Rogers pointed out that leprosy is far more curable than pulmonary tuberculosis. He thinks that the time has come when a more vigorous effort should be made to apply recent knowledge with a view to the ultimate eradication of leprosy from the British dominions. He estimated the total number of sufferers throughout the world at between two and three millions, and those within the British Empire at a minimum of 300,000. The idea that the disease was hereditary was, he said, erroneous. The children of lepers, if removed from possible infection by separation from their parents at an early age, grew up in a normal and healthy manner and produced untainted children. He therefore pleaded for the segregation of lepers, stating that while the disease was probably no more infectious than tuberculosis, it was communicable through prolonged contact with a leper. The method of transmission was not as yet proved, but it was probable that it was conveyed by bacilli from a leper invading the body of a "contact" through a slight skin wound or by the bite of an insect. If every leper could be isolated from the day he became infected, the disease would die out in a generation.

PARIS

(From Our Regular Correspondent)

April 18, 1924.

Practice of Medicine by Agrégé Professors

The *Journal officiel* publishes a decree which introduces a new factor in the functions of agrégé professors at the facultés de médecine. It provides certain extra inducements for agrégé professors who will refrain from practicing medicine and will devote themselves exclusively to instruction. The text of the decree follows:

Agrégé professors of the facultés de médecine and of the facultés mixtes de médecine et de pharmacie are appointed for a period of nine years. However, those who at the time of their appointment do not reserve the right to practice the liberal professions will, after two years of teaching, receive appointments without limitation as to length of service, provided the faculty on which they are serving and the commission on public instruction favor such appointments. The tenure of office of agrégé professors who do reserve such privilege at the time of their appointment will be limited to nine years.

Medicolegal Examinations by Stomatologists

Dr. Sauvez has presented to the third convention on stomatology an important communication concerning ideas that have been suggested to him by his twenty-five years' experience as a medicolegal expert and in the adjustment of various affairs. He classifies these ideas under six different heads.

IDENTIFICATION BY THE TEETH

Before the war, several interesting cases were recorded in which bodies were identified through information furnished by dentists' record cards and models of the jaws, as, for example, after the charity bazar disaster. Since the war, a number of stomatologists and dentists have been requested by families to furnish information by which to identify a body supposed to be that of a relative or friend, and I referred previously to a case in which a body was identified after having been buried seven years in a grave with others (THE JOURNAL, Oct. 7, 1922, p. 1256). It goes without saying that it behooves one in such cases to exercise the greatest prudence and to think of all the grave complications that might arise as the result of an error, especially if there is any uncertainty in regard to a person's death, there being no witnesses, as in the case of a person who has disappeared.

DENTAL OPINION IN CRIMINAL CASES

In criminal cases, the stomatologist or dentist is quite frequently required by the judge of instruction to give his opinion regarding the age and sex of a dead body or with reference to lesions produced by bites. The expert witness cannot be too cautious in a case of this kind. He must resist any inclination to give utterance to a preconceived idea; he must confine himself to the scientific aspects of the problem and reply, in clear and simple language, solely to the questions that are put to him. After an introduction, in which the expert witness states frankly the precise findings that he has made, he should discuss his findings and give his conclusions. In his discussion he should first make his deductions based on indisputable findings, bearing in mind that no statement must be made without carefully weighing all the facts; and that the deductions must be the result of a syllogism based on precise premises established according to the rules of pure logic. If he is in doubt about any point, he should so state. He must not make too many deductions and affirm questionable things. He must always remember that expert testimony by an opposing witness may be presented. Before rendering an opinion, he should view it from all angles. What one is sure of, one should affirm in a positive manner. As regards disputable points, he should present hypotheses with the introductory words, "it is possible that," but never with "it is probable that." The query that can be answered most often in a positive manner by the practitioner is the question of the age of the subject. One will recall the various epochs in the formation of the dental sacs and in the development of the temporary and the permanent teeth. Without endeavoring to vie with Cuvier, who reconstructed an animal from one tooth, one can easily determine the age of a fetus, a child or an adult though merely a fragment of a jaw is available. Sauvez recalls that it was through the examination of the teeth that the age of a skeleton supposed to be that of Louis XVII, son of Louis XVI and of Marie Antoinette, was established. Louis XVII had died in the temple, aged 10 years and 2 months, and the skeleton in question presented, from the dental standpoint, characteristics indicating that it was that of a child at least 14 or 15 years old. This finding refuted absolutely the claims of the Naundorffs, who pretended they were the descendants of Louis XVII. An examination of the pulp cavities—more or less fully developed, according to age, and a study of the formation—more or less complete—of the roots, the crown, of the manner in which the teeth of the upper and lower jaw engage one another, and the wear of the grinding surfaces or the free edges, together with lesions due to caries or pyorrhea, also give valuable indications.

Also bite wounds often present an interesting problem from a medicolegal standpoint. The first point to decide is whether the wound was actually caused by biting teeth, and if so, whether they were human teeth, and whether the wound was inflicted in defense or in the course of an attack. In several famous cases, murderers have been identified from the imprints of teeth. In one case, burglars, having taken possession of all the valuables they could find, were tempted to partake of some bread and butter on the table. On hearing a sound, they departed hastily, leaving behind a partly eaten sandwich which showed very plainly the imprint of teeth. The sandwich was turned over to a dentist, who made a plaster model of it. The model corresponded perfectly to the teeth of one of the accused, who confessed. A few years ago, also Quintin of Brussels identified a murderer by the imprint he had left on an apple. It may be well to point out that bites caused by human teeth are usually on uncovered spots, for example, the face, nose, ears or hands, whereas animals bite wherever they can get a hold. The dog and the cat not only bite but also twist or shake, and seek to tear the flesh. Horses produce lesions by pressure, only the incisors coming into play.

ACCIDENTAL INJURIES CAUSED SUPPOSEDLY BY A DENTIST

It happens frequently that a dentist's clients bring suit against him for injuries which they assert resulted from his interventions. The most frequent charges are: a fractured tooth, fracture of the alveolar borders or of the lower jaw, infection following an extracted tooth, and excessive hemorrhage. As a general rule, in such cases, unless the dentist actually committed a grave error, the expert witness should always ask himself the question whether the accident complained of could not have happened to an operator of average skill, in which case he should show that no operative error but merely an operative accident lies, a distinction between these two terms being very important.

Sauvez referred, in this connection, to the first time he served as an expert witness, for which trial he had been summoned along with two professors of the Faculté de médecine of Paris, one from the department of surgery and one a medicolegal expert. The case concerned a dentist who, under nitrous oxid anesthesia, had attempted to extract with a straight elevator the root of an upper lateral incisor. Having, in his haste, pressed too hard against the root with the forceps, instead of passing the blade of the forceps between the alveolus and the root, the instrument slipped and penetrated, together with the root, several centimeters into the gingivolabial culdesac. A few days later, the patient developed a

phlegmon of the face extending to a point just below the eye, which required an operation; a cicatricial retraction ensued, so that the labial commissure on this side was drawn constantly upward, whereas the commissure of the opposite side was naturally more or less depressed. A deformity resulted, the face presenting in front an asymmetrical appearance, and from the right side a serious or sad cast of the features; and from the left side the face seemed to wear a constant smile. When Sauvez was asked his opinion, he said that he thought the dentist was in error: (1) in employing general anesthesia for the extraction of the root of an upper incisor, as it is an operation easily performed under local anesthesia; (2) that he had acted roughly and awkwardly in not guiding his instrument properly and allowing it to slip, and (3) that he ought to have employed antiseptic solutions at once to protect the patient from the danger of infection and have seen to it that a surgeon was engaged to extract the infected root, disinfect the wound and watch further developments. The opinion of the two professors, who had had a wide experience, was that the question of the kind of anesthesia was not under consideration in this case; the dentist had the right to use general anesthesia, and he had used it without accident; there was nothing further to be said on the subject. In opposition to Sauvez's position, they urged that any surgeon might meet with a similar accident; for example, he might some day have an instrument slip and sever an artery just at the moment when he was about to excise an exostosis in a dengerous place. If the dentist had been found guilty of an error, the courts would not have failed to cite this judgment in similar cases later. The third point, however, was upheld, and the dentist was sentenced to pay a small fine. Sauvez admits that this lesson had been very useful to him later in judging accidents imputed to dentists.

He reported another very instructive case. An expert witness had been called to give his opinion on an accident caused by a dentist; namely, fracture of the lower jaw brought about by the extraction of a wisdom tooth. He performed a number of careful experiments to see whether it was possible to fracture a healthy lower jaw by extracting a tooth. He became convinced by his experiments that the dentist had acted in a rough manner. However, the day before he was to file this report, he was asked to extract a right lower wisdom tooth from a woman patient who had called in consultation a physician and a surgeon. The operation was performed under chloroform anesthesia and everything seemed to be progressing normally when, that evening, he was summoned by the patient, who was suffering greatly, and he discovered that the lower jaw was broken. It is scarcely necessary to add that he wrote a new report.

Dental infections will sometimes arise though all possible precautions are taken, in view of the susceptibility of the buccal cavity to infection; but that fact does not excuse one from taking the greatest precautions, and Sauvez recommends that preparations for disinfection be made openly. He advises filling the syringe with procain before the patient, taking the usual precautions, and to bring, on a plate containing an antiseptic fluid, the instruments which have been sterilized and which are to be used for extraction. Furthermore, no patient who has submitted to an extraction should leave the dentist's office without being given a prescription requiring him to rinse the mouth with an antiseptic solution; for example, a 1:1,000 solution of formaldehyd. The patient should also be urged to return during the days following if the wound should pain him, or immediately if it bleeds. In many cases dentists have been acquitted, because they had taken these precautions, and it has often been difficult for others to avoid fines when they had not been thus prudent. As a prophylaxis against hemorrhage, if the patient says he has a tendency to hemophilia, he should be given, three or four days before the operation, a potion containing 4 gm. of calcium chlorid to take before the operation, and, if hemorrhage occurs, it should be stopped by the use of tampons, for which purpose sterilized gauze and not absorbent cotton should always be employed.

It should be remembered that several fatalities have resulted from extractions through the development of infections. There have also been more than fifty deaths through the swallowing of prosthetic apparatus. Patients should always be advised to remove at night all movable apparatus and to inspect it from time to time to see that it is in order.

MADRID

(From Our Regular Correspondent)

March 20, 1924.

Unusual Method of Raising Funds

In order to furnish funds to the permanent commission against tuberculosis, the government has ordered that, for a period of two months, no one may publish or reprint the recent law on municipal government, as well as any comment or interpretation of this law. Of the net proceeds from the sale of copies of the official edition, 50 per cent. will go to the tuberculosis commission and 50 per cent. will be devoted to a campaign of education relating to the provisions of the new law.

Inheritance of Physicians' Pensions

The army directory has accepted the suggestion that the pensions received by physicians invalided in epidemic campaigns shall be inherited, after their death, by their widows and orphans. Until now, when these physicians have died the pensions have stopped, leaving some widows and orphans almost helpless.

Malaria in Spain

Dr. Sadi de Buen recently discussed, at the Madrid Atheneum, the work accomplished by the commission on sanitation of malarial regions. In Talayuela, in 1913, out of 600 inhabitants, 300 had malaria. In an antimosquito campaign, mosquito trapping was used, and in 1921, 91,352 mosquitos were trapped, 0.24 per cent. of which were infected; 14,000 pesetas (more than $1,000) was spent in 1921 for oil; in 1922, only 1,400 pesetas was spent for oil, but mosquito-eating fish were placed in ponds. In 1922, 122,504 anopheles were trapped. In 1923 the farmers protested against the oiling of ponds, and the mosquitoes are again increasing. In Talayuela, the malarial morbidity formerly used to be from 43 to 60 per cent. of the population. In 1921, it had decreased to 21 per cent., and in 1922 to 14.28 per cent. If recurrences are left out, the figures are 17.1 and 8.1 per cent., respectively. In Talayuela, an inspector surveys about 600 persons every day or two, securing blood samples at the first sign of sickness. If malarial organisms are found, quinin is furnished free, and taken in the inspector's presence. In the towns where no antimosquito work has been done, malaria is three times as prevalent as in Talayuela, in spite of treatment. In dispensaries established in the first year of the campaign, 3,036 persons were examined, and in 4,000 examinations, 1,296 were positive. This justified the opening of dispensaries in other towns. In 1922, 2,388 examinations were positive for malaria. Local physicians, instructed in this work are in charge of the four dispensaries now operating. During 1923, more than 11,000 persons were examined, and 5,000 cases of malaria were found. Altogether, from December, 1920, to the end of 1923, 18,845 persons were examined in the provinces of Caceres and Toledo, and more than 9,000 were treated.

In 1921 and 1922, kala-azar was found among children in the province of Caceres, as was relapsing fever, a new disease in Spain.

Internal Secretion of Spleen and Pancreas

Professor Castex of Buenos Aires gave a lecture in the National Academy of Medicine on the relation of the internal secretion of the spleen to the external secretion of the pancreas. In two cases he was able to demonstrate the direct action of the spleen secretion on the pancreatic. In these cases, there was a deficiency of trypsin as a result of a spleen lesion, and whenever spleen substance was given, the secretion of trypsin became normal, decreasing as soon as the spleen therapy was suspended. He emphasized the importance of the careful study of patients. The physician can in some cases thus blaze a road for the physiologist and furnish him material for study.

Representation of Spain on Public Health Commission of League of Nations

Dr. Pittaluga, professor of parasitology in the Madrid Medical School and a member of the National Academy of Medicine, now represents Spain on the Committee of Public Health of the League of Nations. In this capacity, he discussed the importance of having an adequate supply of quinin salts in the campaign against malaria. Spain is importing at present about 6,000 kg. of quinin yearly. As there are about 250,000 cases of malaria, each requiring from 40 to 60 gm. of quinin, Spain should really use at least 12 tons (about 11,000 kg.) of quinin salts a year. This lack of proportion between theoretical needs and actual use is even greater in other European countries. The commission sent by the League of Nations to Greece states that 9,000 kg. of quinin is needed, while only 500 kg. is available. In Russia there were 9,000,000 cases of malaria in 1922, and the amount of quinin available was very small. It seems that at present the supply of quinin is only one tenth of the amount necessary for the treatment and prevention of malaria throughout the world.

Meeting of the Medical Press

Last week there was a meeting of medical journalists in Madrid. Thirty journals sent representatives. Among other things, it was agreed to admit as members only bona fide medical, pharmaceutic or veterinary journals; to maintain exchange only with journals belonging to the association; to drop any journal suspending publication for three months, and to establish a minimum rate for advertisements.

BELGIUM

(From Our Regular Correspondent)

April 8, 1924.

Treatment of Infections with Peptone

Since the war, Nolf's method of treating infectious diseases and surgical infections by the intravenous injection of peptone has become known. At a recent meeting of the army physicians of the Brussels garrison, Dr. Keersmaekers reported a number of interesting results from this method of treatment in cases of pseudolobar bronchopneumonia, pleuropulmonary congestion, erysipelas of the face, acute meningitis and septicemia. The communication is worthy of attention because of the large number of cases studied. The author believes that treatment with salicylates alone is not always sufficient. The injection of colloids associated with sodium salicylate or with sodium bicarbonate, administered day and night, together with articular autoserotherapy in case of effusions, gave remarkable and rapid results. In the last winter, he substituted for the colloids a solution of peptone and increased the doses of sodium salicylate. He concludes that: 1. The injection of peptone plus salicylate plus autoserotherapy gives results superior to any secured heretofore. 2. The effect is more marked and more rapid if the injections are given early and if it is a first attack. 3. The disappearance of the pain and defervescence must not be taken as indications for the omission of sodium salicylate, for the medication should be continued for a considerable time. 4. With a quantity of sodium bicarbonate double that of sodium salicylate, some gastric disturbance and tinnitus were produced. When the dose of sodium bicarbonate was increased, they disappeared in the majority of cases.

The Superior Council of Public Health

In a previous letter, I outlined the organization of public health in Belgium. A section most deserving of attention because of its preponderant influence in fighting disease is the superior council of public health. The character of its members makes it the highest sanitary authority of the nation. It is composed of forty-five members, all representative men in their profession. Delegates from the various ministerial departments that have work of a hygienic character to perform serve on the council. For example, the ministries of the interior, public health, industry and labor, science and art, agriculture and public works, as well as the departments of justice, national defense, railways, the navy and the colonies are all represented. The superior council of public health has for its object: (1) to study everything that will contribute to the progress of public health and to draft legislation to further this end, and (2) to give opinion on questions of sanitation and public health addressed to the council by the central government or by provincial authorities.

The work of the council is distributed among six sections: (1) public health pertaining to individuals and groups; (2) prophylaxis of transmissible diseases; (3) prophylaxis of tuberculosis; (4) food hygiene; (5) hygiene pertaining to dwellings, towns and cities, and (6) hygiene pertaining to industry, the trades and the professions.

The Campaign Against Cancer

Before leaving the ministry of the interior and public health, Viscount Berryer presented an amendment to the budget of his department to aid the campaign against cancer in Belgium. He proposed that a million francs be appropriated for this work in 1924. With that fund, centers for treatment could be established in the university cities at the start, and later on in the other principal towns. With the aid of subsidies granted by the government, also institutes for the care and relief of persons of limited means would be established.

The First Medical Journal in the Congo

The first number of the first medical journal to be published in the Belgian Congo, the *Bulletin médical du Katanga*, has appeared. The journal has the support of the medical services of the general government, the miners' union of Haut-Katanga, and the railway administration of Katanga. For the present, it will be issued quarterly, but it is hoped that later it may appear more frequently. The principal editors are Valke, Van Nitsen and Cassart. Dr. Van Nitsen, whose address is Elizabethville, Katanga, via Cape Town, has been appointed secretary of the editorial staff.

Inspection of Meat

The sale of meat in Belgium is controlled by the state. All meat for human consumption is subject to rigid inspection by government experts, who must be graduate veterinarians. No butchered meat, whether fresh or preserved, may be imported unless inspected and approved by custom house experts. The cost of the meat inspection service is defrayed by a small duty on meat imports just sufficient to cover the expense. Since the war, the government has permitted the importation into Belgium of a large quantity of frozen meats; the countries of origin have been restricted to those having an

efficient meat inspection service, and carefully inspecting all meats intended for export. The countries whose meat inspection services have thus far been approved by the Belgian government are Argentina, Australia, Brazil, England, New Zealand, the Union of South Africa, and the United States.

The increasing importations of frozen fresh beef indicates that the demand for this article of diet among our people is growing. In 1919 the importations through Antwerp amounted to 2,502,507 kg.; in 1920, to 37,516,976 kg., and in 1921, to 40,334,667 kg.

New Chair of Social Medicine

A chair of social medicine has been created by the Faculté de médecine of Brussels, in connection with instruction leading to the degree of doctor of public health (Dr. P. H.). Dr. Herman of Antwerp, honorary president of the Belgian medical federation, is the first appointee to this chair.

Plan to Coordinate Therapeutic Results of Radiology

To coordinate the results of roentgen-ray and radium treatment, Dr. Gobeaux has presented to the Société belge de radiologie a plan that seems to deserve general acceptance. He proposed that every society appoint a secretary to keep careful records of all patients whose cases were observed by members of the society and reported as cured or improved. Periodically—say, every six months—the members of the society would be required to report the later history of their cases. Thus, a series of observations on many cases extending over years would be recorded, and this would aid in forming an opinion in regard to the duration of cures or remissions and the frequency of recurrence. The plan would entail considerable work, but the records would be very instructive. There is certainly no better method of centralizing, as it were, observations and results.

BERLIN

(From Our Regular Correspondent)

April 19, 1924.

The Conflict with the Health Insurance Societies

In my previous letter I reported that an armistice had been signed by the executive board of the Berlin league of physicians and the representatives of the health insurance societies, and that the preliminaries for a new contract had been agreed on. It was stipulated that the executive board of the physicians should use its influence to induce unemployed physicians and those with a small practice to renounce voluntarily their claims to panel practice. Likewise, hospital physicians and those whose time is fully taken up by their regular duties should discontinue serving on the panel of Krankenkassen physicians and no physicians of these categories should be admitted further. In general, new physicians should not be admitted to panel practice except on the following conditions: Nonresident physicians shall not be admitted to the panel until five years after their names are proposed, and resident physicians shall not be admitted under two years following application. New admissions may be made only once a year. Panel physicians who during the conflict just closed were dismissed by the executive boards of health insurance societies shall be reinstated. The ambulatory clinics that the health insurance societies created, during the struggle, for the treatment of their members shall continue to function. The physicians who, in opposition to their organization, accepted, during the struggle, service under the health insurance societies shall retain their positions. Against these and other provisions considerable opposition among physicians developed. Therefore, the executive board of the physicians' league called a special meeting of the physicians in order that the whole question might be gone over. At this meeting the opponents of certain provisions of the proposed contract repeatedly took the floor. The representatives of the younger physicians emphasized that they were opposed to the increasing tendency to restrict unduly the entrance of new, particularly the younger, physicians to the panel service. The opposition was especially strong toward the continuance, even temporarily, of the ambulatory clinics created by the health insurance societies, and toward the retention in the service of the "emergency" physicians so-called, who accepted appointments during the conflict. In spite of this opposition, however, the following resolution expressive of confidence in the executive board was passed by a large majority:

> The joint meeting of the members of the physicians' league of Greater Berlin and of the Aerztevertragsgemeinschaft of Greater Berlin, held April 15, expresses its deep regret that the ambulatory clinics and the "emergency" physicians were not eliminated at the conclusion of the armistice. The organized medical profession persists in its positive refusal to fraternize with the "emergency" physicians who took service under the health insurance societies. It gives voice to the expectation that during the negotiations in connection with the drafting of the final contract means will be found to make some very essential changes in the preliminary terms of the contract; and especially, that the ambulatory clinics may be promptly abolished. The joint meeting expresses its confidence in the executive boards and the special committees.

Loss of Weight Among the German Population

Dr. F. Fischer has made a special study of the statistics of the large Gotha Life Insurance Bank, and in a recent article in the *Klinische Wochenschrift* he has published his findings with reference to the deterioration in the quality of food and the resulting loss of weight among the German population. His studies were made on two series of subjects insured in the Gotha Life Insurance Bank. In the first series, such persons were included as had, previously to 1922, filed several applications before, during and since the war, and had thus been examined several times during the period of observation. In the second series, an equal number of persons, newly insured, was taken, for purposes of comparison, from two prewar years and from the years since 1915. These were divided into age-groups for comparison. For the determination of the general physical condition of applicants Dr. Fischer and his collaborators noted mainly the height, girth of chest (deflated and with full inspiration), abdominal girth and the weight of subjects.

In order to be able to express by a single figure the results as to the height, weight, chest girth and abdominal girth, which varied according to the age of the subject, the investigators figured out after intricate calculations a satisfactory index, the formula for which was worked out by Dr. Hauptmann, bank mathematician in Gotha. In a table, the average weights and the chest and abdominal girths of the policyholders of the Gotha Life Insurance Bank of the prewar period are given separately according to heights arranged progressively by centimeters. The formula is based on the fact that certain definite relations exist between the age-groups and the measurements representing the height and the chest and abdominal girths. It was found that ¾ the height (H) + the age (A) + 15 as a fixed complement = girth of chest, deflated (Ch) + abdominal girth (Ab). It must be expressly emphasized that this formula can be used only for scientific and comparative investigations. It would be a wrong use to employ the index figures as a means of judging the constitution of a single individual in a practical test. In the case of thin persons there is an element of error on the negative side and in the case of the corpulent on the positive side, but these differentiations have no marked influence on the final outcome. The figures for the first series extend from 1905 to 1922. The records of 717 persons are studied, they having been examined a total of 1,756 times by the physicians of the insurance company. From the observed weights and measurements of each policyholder the formula number (represented by *F*) was figured out. These formula num-

bers were distributed according to years and then the annual average (expressed in formula numbers) was determined. During the prewar years F stood, on the average, at zero, although as the years succeed each other a general upward tendency becomes manifest. In 1915 it dropped to —5.0, in 1916 and 1917 to —9.7, and in 1918, following the year in which turnips constituted a main article of diet, it fell to —13.3. From then on, there is a gradual upward trend until 1922, but even in the fourth year of peace (1922) the conditions of 1915 had not yet been restored. The average age of the examinees of this series was: before the war, 29.1; during the war, 30.1; after the war, 34.1, the average being 33.2 years. No research was made to determine whether or not there was a difference between the formula numbers of the able bodied, capable of bearing arms—that is of those who were strong and healthy—and the numbers of those found unfit for military service, that is, whose condition was below standard; for the policyholders among the men at the front constituted a very small fraction of the total. Then, too, it could not be ascertained when the policyholders entered the service and thus were subjected to different dietary conditions.

The second series, the newly insured, shows the effect of the quantitatively and qualitatively inadequate food on the various age groups. From the beginning of the war, a progressive deterioration of the constitution is observable, and in 1922 the formula numbers of juveniles had advanced dangerously near to those of the older age groups. The loss of weight affects not only the trunk but also the head, the neck and the extremities. From 1917 on the diminution of the abdominal girth was greater than that of the chest girth. In 1919, in which year, after a long period of an almost fat-free diet, fats from foreign countries again began to be imported, a moderate improvement was noted, which was especially apparent as regards weight and abdominal girth. From 1919 to 1921, the chest girth remained the same. The chest, which in the beginning lost its fat, has now become fixed in its form by the bones and musculature. The changes in the chest are much slower than in the abdomen. That was shown also in 1921. Whereas the abdomen began to approach its former rotundity and the weight improved considerably, the chest showed little or no improvement. The deterioration in the food supply in 1922 affected the chest and also the abdomen (but the latter much more markedly) and brought them back to the level of 1918. It should be emphasized that these statistics concern only persons who were accepted as policyholders; that is, only those who were selected risks. Children and the aged, who usually do not become policyholders, are not included in this survey.

Marriages

FRANCIS CLIFFORD NESBIT, Atlanta, Ga., to Mrs. Carolyn Louise Sparling of Charlotte, N. C., May 7.

ROLLIN DWIGHT BAKER, Freeport, N. Y., to Miss Hilda Fraleigh of Los Angeles, April 9.

HARRY SANDS WEAVER to Miss Theodosia Ruth Hartley, both of Philadelphia, March 12.

PAUL WILLIAM GIESSLER to Miss Catherine Hughes Boetler, both of Minneapolis, May 1.

LOUIS ROY WAYMAN to Miss Nell Overly Brandon, both of Murphysboro, Ill., April 17.

HARRY M. BOX, Cincinnati, to Miss Adelyn Eddington of Fort Thomas, recently.

JOSEPH MOSS to Mrs. Fannie Fishman, both of Grand Forks, N. D., April 1.

ALBERT FLEMING to Miss Susie Mizell, both of Folkston, Ga., April 30.

Deaths

Charles Adams ⊕ Honolulu, Hawaii; Hahnemann Medical College and Hospital, Chicago, 1872; Rush Medical College, Chicago, 1898; professor of surgery and pathology at the Hahnemann Medical College and Hospital, Chicago, 1873-1875, and professor of principles and practice of surgery at the Chicago Homeopathic Medical College, 1875-1884; member of the Illinois State Medical Society, and the American Psychiatric Association; aged 76; died, May 6, of senility.

John Ramsey Littlefield ⊕ Cumberland, Md.; George Washington University Medical School, Washington, D. C., 1908; formerly county physician; served in the M. C., U. S. Navy, during the World War; on the staffs of the Western Maryland Hospital and of the Allegany Hospital, where he died, April 24, of pneumonia, aged 44.

William Cullen Bryant, Corbin, Ky.; Hospital College of Medicine, Louisville, 1882; Kentucky School of Medicine, Louisville, 1897; member of the Kentucky State Medical Association; aged 71; died recently, at the John N. Norton Memorial Infirmary, Louisville, following a prostatectomy.

John Funnell Holmes, Mount Kisco, N. Y.; Medical Department of the University of the City of New York, 1875; member of the Medical Society of the State of New York; founder and president of the Union Hospital of the Bronx, New York; aged 71; died, April 27, of senility.

Nathaniel J. Redpath ⊕ Olympia, Wash.; Jefferson Medical College of Philadelphia, 1887; past president of the Thurston County Medical Society, for ten years on the staff of the Western State Hospital for Insane, Fort Steilacoom; aged 64; was found dead, April 21, of heart disease.

Elwood B. Haworth ⊕ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1883; past president of the Allegheny County Medical Society; for forty-one years on the staff of the Western Pennsylvania Hospital; aged 61; died, April 24, of cerebral hemorrhage.

Frederick Edward Fyle, Geddes, S. D.; University of Toronto (Ont., Canada) Faculty of Medicine, 1907; aged 50; was found dead in his automobile in Rhyne Creek, near Yankton, May 4. Dr. Fyle had been missing since Dec. 11, 1923 (THE JOURNAL, March 1, p. 725).

Harold Lucian Palmer, Washington, D. C.; Medical Department of Columbia College, New York, 1890; formerly on the staff of the Mount Sinai Hospital, New York; for twenty years superintendent of the Utica (N. Y.) State Hospital; aged 59; died, April 26.

George Weeks Hale ⊕ Nashville, Tenn.; Medical Department of Columbia College, New York, 1872; member of the American Ophthalmological Society and the American Otological Society; aged 76; was found dead in bed, April 28, of heart disease.

Frederick Alfred Fisher ⊕ Chicago; Rush Medical College, Chicago, 1901; veteran of the Spanish-American and World wars; on the staffs of the Alexian Brothers' Hospital and of the Illinois Masonic Hospital, where he died, May 3, of heart disease.

Harry Rodman ⊕ New York; Medical Department of Columbia College, New York, 1895; on the staffs of the Hospital for Joint Diseases, and the Bronx Eye and Ear Infirmary; aged 52; died, April 29, following a cholecystotomy.

Chester Irving Fisher, New York; Medical School of Harvard University, Boston, 1870; member of the Massachusetts Medical Society; for twenty-two years superintendent of the Presbyterian Hospital; aged 77; died, April 26, of senility.

Edward Julian Moseley, Sr., Richmond, Va.; Medical Department of the University of the City of New York, 1860; member of the Medical Society of Virginia; Confederate veteran; aged 86; died, April 22, of senility.

William Brimblecom Little ⊕ Lynn, Mass.; University of Vermont College of Medicine, Burlington, 1884; formerly city physician; at one time on the staff of the Lynn Hospital; aged 64; died, April 30, of heart disease.

James Otis Hardin, Spring Hill, Tenn.; Medical Department of the Tulane University of Louisiana, New Orleans, 1867; member of the Tennessee State Medical Association; aged 84; died in April, of senility.

Perlia Elijah Garlock, Schenectady, N. Y.; Albany Medical College, 1905; member of the Medical Society of the State of New York; aged 46; died, April 29, of mitral regurgitation, following an appendectomy.

Guy A. Schultz, Danville, Ill.; Medical College of Indiana, Indianapolis, 1900; on the staff of the National Home for Disabled Volunteer Soldiers, where he died, April 26, of heart disease, aged 51.

Charles Marion Martin, Bellevue, Wash.; Bellevue Hospital Medical College, New York, 1874; formerly mayor of Greenville; for nine years president of the school board; aged 84; died, April 17, of senility.

William Dickson Redus, Port Gibson, Miss.; Bellevue Hospital Medical College, New York, 1878; member of the Mississippi State Medical Association; aged 70; died, April 21, of heart disease.

Alexander Taylor Henderson, Ashland, Ky.; Medical College of Ohio, Cincinnati, 1877; aged 77; died, April 23, at the King's Daughters' Hospital, as an indirect result of roentgen-ray burns.

John Davis Wilson, Laketon, Ind.; Ensworth Medical College, St. Joseph, Mo., 1896; member of the Indiana State Medical Association; aged 64; died, April 22, of cerebral hemorrhage.

Samuel Middleton Garlick ✪ Bridgeport, Conn.; Dartmouth Medical School, Hanover, N. H., 1875; Medical School of Harvard University, Boston, 1877; aged 78; died, April 12, of senility.

Edward W. Synder, Brownwood, Texas; University of Louisville (Ky.) Medical Department, 1881; member of the State Medical Association of Texas; aged 70; died recently, of senility.

Anna C. R. Stevens, Mount Vernon, N. Y.; New York Medical College and Hospital for Women, New York, 1875; aged 79; died, April 22, at the Seabury Memorial Home, of senility.

James E. Green, Chattanooga, Tenn.; University of the South Medical Department, Sewanee, 1900; member of the Tennessee State Medical Association; aged 62; died in April.

John M. Coleman, Newport, Ore.; Eclectic College of Physicians and Surgeons, Indianapolis, 1893; formerly coroner of Tazewell County; aged 73; died, March 27, of senility.

Benjamin Walker White, Bridgeport, Conn.; Long Island College Hospital, Brooklyn, 1886; member of the Connecticut State Medical Society; aged 64; died suddenly, April 21.

Samuel Canby Willson ✪ Anderson, Ind.; Georgetown University School of Medicine, Washington, D. C., 1888; aged 55; died, April 25, at St. John's Hospital.

Henry Washington Irving, Boston; Tufts College Medical School, Boston, 1906; member of the Massachusetts Medical Society; aged 44; died suddenly, April 17.

Charles Schuyler Zeigler, Peoria, Ill.; Barnes Medical College, St. Louis, 1899; member of the Illinois State Medical Society; aged 52; died, April 20.

Hans Rabenstein, New York; University and Bellevue Hospital Medical College, New York, 1899; aged 59; died, April 14, of myocarditis.

Joseph John Helminak, Cleveland; St. Louis (Mo.) University School of Medicine, St. Louis, 1911; aged 38; died, March 18, of pneumonia.

Charles Blome Patterson, Augusta, Ga.; University of Georgia Medical Department, 1890; also a pharmacist; aged 57; died, April 18.

George Alvin Wright, Columbus, Ohio; Ohio Medical University, Columbus, 1898; aged 56; died, April 16, at Detroit, of heart disease.

David Johnson Wallin, Brooksville, Ky. (licensed, Kentucky, 1893); Civil War veteran; aged 83; died, April 20, of carcinoma.

Wilson H. Mahon, Cooksville, Ill.; American Medical College, St. Louis, 1880; aged 69; died, April 30, following a long illness.

Robert Nelson Clemons, Ticonderoga, N. Y.; Albany Medical College, New York, 1894; aged 57; died, April 19, of pneumonia.

John W. Millick, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1868; aged 78; died, May 1, of senility.

Hiram L. Randall, Falls City, Neb. (licensed, Nebraska, 1891); aged 85; died, April 9, at Grand Island.

William Duncan, Dierks, Ark. (licensed, Arkansas, 1903); aged 55; died, April 17, of cerebral hemorrhage.

William D. Price, Sanford, N. C.; Leonard Medical School, Raleigh, 1913; aged 40; died, March 6.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

NUGA-TONE

Tablets Containing Strychnin, Arsenic and Bichlorid of Mercury Sold Indiscriminately by a Mail-Order Quack

"Nuga-Tone" is a nostrum sold on the mail-order plan by a speciously named concern in Chicago called the "National Laboratory." It appears that "National Laboratory" is the latest name under which Charles E. Cessna carries on mail-order quackery. Cessna, of whom the Chicago *Tribune* once said he "at different times in his business career has been a loan shark, patent medicine vendor and land promoter" is well, if unfavorably known to the medical profession by his activities as a mail-order quack.

Prior to 1914 Cessna was operating a fraud that went under the name "Dr. Joseph Lister & Company." This name was abandoned when the federal authorities commenced action against it, but the business was continued under the name of "Dr. J. Russell Price Company." In 1918 the federal authorities declared the "Dr. J. Russell Price Company" a fraud and debarred it from the use of the United States mails Cessna who had unsavory publicity in the newspapers in other capacities than that of a mail-order quack, was graduated in medicine in 1885 and licensed to practice in Illinois in 1886. In September, 1918, his license to practice medicine and surgery in the state of Illinois was revoked.

Greatly reduced reproductions of some typical "Nuga-Tone" advertising.

Hardly had the government put a quietus on the J. Russell Price fraud than Cessna seems to have started the "Nuga-Tone" fake. "Nuga-Tone" is described as "the Great Nerve and Blood Builder." It has been advertised in that class of weeklies sometimes described as the "cheap and nasty" and, as was Cessna's wont with his other mail-order fakes, the foreign-language press of the United States has been liberally patronized—the last resort of quacks who are unable to get into the English-language newspapers of the country. The Nuga-Tone advertising runs true to form. Prospective victims are urged to fill out a coupon and send it in to the "National Laboratory." The guillible are told that Nuga-Tone is "one of the greatest Health, Strength and Vitality Builders ever offered to suffering humanity" and "suffering humanity" is given the opportunity of a free trial of the marvel.

The circular letters sent out by the concern carry the usual number of testimonials from the usual type of testimonial givers. L. H. Holle of Hartley, Iowa, testifies that Nuga-Tone did his wife more good than the $500 he paid out for doctors' bills. Mrs. H. H. Hill of Greentown, Ohio, thinks Nuga-Tone "has put new life" into her. P. S. Groesbeck of Schell City, Mo., declares he has been "greatly benefited" by Nuga-Tone, using it for "kidney trouble, nervousness, constipation, stomach trouble, bloating of the bowels caused by indigestion . . . and steadying the heart action." Mrs.

Alvina Gerdes of Danforth, Ill., used six bottles of Nuga-Tone and thinks it is a "good remedy" for one who is "all run down in health." Charles Cooper of Willow Hill, Ill., whose picture—white tie, silk hat and all—embellishes the Nuga-Tone advertising, took two bottles of Nuga-Tone for the shingles and declares that, in two weeks, it cured him, put "pep" in him and he gained 10 pounds. There are many other testimonials from equally prominent citizens of equally well-known centers of population.

The advertising matter does not tell just what is in Nuga-Tone. It does say that it is "rich" in iron and phosphorous and also contains cascara and "nux." Further, one is told, "there are four other medicines" in Nuga-Tone.

In March of this year THE JOURNAL received a letter from a physician in Rhode Island stating that a two-year-old baby had swallowed a number of Nuga-Tone Tablets and went into a series of convulsions followed by coma. This child, however, eventually recovered. In April of this year Dr. Rollin D. Worden of Ravenna, Ohio, reported the case of a boy, three and one-half years of age, who, in the parents' absence, had climbed to a shelf in the kitchen and taken a number of tablets of Nuga-Tone. The child promptly went into convulsions and died on its way to the hospital. Dr. Worden reported the case to the National Laboratory and asked the concern what was in the nostrum. He received a letter from Cessna stating that the formula of Nuga-Tone was one that he, Cessna, had prescribed and used extensively in his practice thirty-five years previously. He gave the formula as:

"Corrosive Sublimate	1/60 gr.
"Strychnin Sulphate	1/60 gr.
"Arsenic Trioxide	1/40 gr.
"Reduced Iron	½ gr.
"Ext. Gentian	½ gr.
"Ext. Cascara Sagrada	¾ gr.
"Ext. Taraxacum	½ gr.
"Zinc Phosphide	1/50 gr."

Here, then, we have a mail-order medical concern sending indiscriminately over the country to any one who writes, tablets containing 1/60 of a grain of mercuric chlorid, 1/60 of a grain of strychnin sulphate and 1/40 grain of arsenic trioxide. The only warning that appears on the bottle is a statement, so printed as easily to be overlooked, reading: "Do Not Give to Children Under 16 Years."

Here again we have vividly shown the present weakness of state and national Food and Drug Laws. The national Food and Drugs Act requires a declaration on the label of the presence and amount of only eleven drugs and their derivatives. A score of deadly poisons may be used in "patent medicines" and the purchaser is none the wiser. In the interests of public safety federal and state laws should require that every medicine sold to the public for self-administration should bear on the label the names and quantities of every ingredient for which therapeutic claims are made. It is an anomalous state of affairs when ignorant quacks can, under the law, sell broadcast, with no word of warning, "patent medicines" containing such poisons as strychnin, arsenic, aconite, prussic acid, carbolic acid, mercuric chlorid and others equally dangerous.

Under our inadequate laws, Cessna cannot be held in any way responsible for the poisoning of the small child whose death is reported by Dr. Worden. In law it is doubtful if the parents have any recourse against this quack. Under our present system, before a man may prescribe or dispense drugs, he must have studied some years, graduated in medicine or pharmacy and passed an examination given by the state. But any ignorant scamp can both prescribe and dispense deadly poisons to the public with practically no let or hindrance, provided he does it under the guise of selling a "patent medicine." "The law allows it. . . ."

One thing further: The National Laboratory is, as has already been made plain, merely a trade name of C. E. Cessna. It is no more a laboratory than it is an art institute or a cathedral. All that Cessna does is to have these tablets made up for him by the "special formula" department of some pharmaceutical houses. This brings up once more the responsibility of supposedly reputable concerns aiding and abetting the quack and becoming *particeps criminis* with him in his dirty business.

Correspondence

PRISON STATISTICS OF CANCER

To the Editor:—The suggestion has occasionally been made that much might be learned from a careful examination of prison mortality records regarding the relative frequency of cancer among convicts. Obviously, such an investigation would have to be confined to institutions for serious offenders, serving relatively long sentences, possibly for life.

As a preliminary contribution, I addressed a letter to some of our penal establishments, and the results for four representative institutions are presented here. The investigation covers the decade 1914-1923, and shows in each case the number of convicts under observation and the number of cancer deaths reported among them. For Sing Sing prison, unfortunately, only the average number of convicts is given and placed at 9,600, but the variation in the number actually exposed to risk would probably not be a matter of serious concern. For Sing Sing also the information is only for the last eight years.

Cancer in Penal Institutions

Year	Eastern Penitentiary Philadelphia		Charlestown, Mass.		San Quentin, Calif.		Sing Sing, N. Y.	
	Convicts	Cancer	Convicts	Cancer	Convicts	Cancer	Convicts	Cancer
1914	1,464	..	727	..	1,990	..	.....	?
1915	1,588	..	747	..	2,272	..	.....	?
1916	1,449	1	736	..	2,229	1	1,200	..
1917	1,424	2	674	..	2,228	..	1,200	..
1918	1,392	1	583	..	2,047	1	1,200	..
1919	1,504	..	593	..	1,804	1	1,200	1
1920	1,573	2	569	..	1,816	..	1,200	..
1921	1,592	..	507	..	1,899	..	1,200	1
1922	1,709	..	580	..	2,185	..	1,200	..
1923	1,578	..	624	..	2,384	2	1,200	..
1914-1923	15,273	6	6,220	..	20,954	5	9,600	2

Summary

	Population	Deaths	Death Rate per 100,000
Eastern Penitentiary, Philadelphia	15,273	6	39.3
Charlestown, Mass.	6,220	..	....
San Quentin, Calif.	20,954	5	23.9
Sing Sing, N. Y.	9,600	2	20.8
	52,047	13	25.0

The investigation concerns 52,047 convicts exposed to risk each year, among whom there occurred thirteen deaths from cancer, equivalent to a rate of 25 per hundred thousand. In view of the fact that all the convicts are 18 years of age and over, and that the probable average age of the convicts will be near to 40 years, the rate must be looked on as extremely low.

The results of this investigation are in conformity with such observations as have heretofore been made. They are suggestive, however, of a nation-wide inquiry, including possibly some of the leading penal institutions in Canada. The relative rarity of cancer among prisoners would seem to be decidedly suggestive of the importance of dietary factors in cancer causation. The diet is, generally speaking, just sufficient for wholesome nutrition, and rarely of a nature to produce hypernutrition. There are no statistics regarding the physique of prisoners, but such could be readily obtained in connection with a more extended investigation. Another factor of possible importance would seem to be the relative absence of worry incident to prison life, in contrast to the stress and strain of civilized life in the daily struggle for existence. The routine of prison life readily becomes a matter of habit as one of extreme regularity and simplicity. An investigation into the cancer question would seem to include the relative importance of nervous strain in correla-

tion to dietary errors. The fact, of course, should not be overlooked that prisoners in the prisons included in the present investigation are under constant and qualified medical supervision. It is true that there is a possibility that some prisoners in advanced stages of the disease may have been removed to hospitals outside the institutions, but this is somewhat doubtful. The possibility of diagnostic errors, it may be said in conclusion, is probably much less in prison than in outside practice. The subject certainly is one deserving of further investigation.

FREDERICK L. HOFFMAN, Wellesley Hills, Mass.

L. DUNCAN BULKLEY AND CANCER

To the Editor:—In THE JOURNAL, April 19, p. 1285, there is a letter from Dr. Albert G. Hulett concerning Dr. L. Duncan Bulkley's cancer treatment. This letter gives the impression that he is, at present, conducting a "medical" cancer clinic in the Skin and Cancer Hospital. Regarding Bulkley's extravagant claims, the previous secretary of the medical board of the Skin and Cancer Hospital, Dr. George Semken, repudiated all his claims and pretensions in two letters, published in THE JOURNAL, June 23, 1923, p. 1867, and Oct. 22, 1921, p. 1357.

Dr. Bulkley asserted that he held the position of senior physician. There is no such position in the Skin and Cancer Hospital. In the last annual report, Dr. Bulkley is down as dermatologist emeritus. It is a number of years since Dr. Bulkley had a clinic in the hospital, and then it was related to general dermatology; that was before he became so obsessed with his diet treatment of cancer. A medical cancer clinic that he conducted a short time has long since been abolished, as the hospital recognizes no medical treatment for cancer, and therefore is holding no "medical" cancer clinics.

The profession has recognized the absurdity of Dr. Bulkley's pretended diet cure for cancer, and the medical staff of the New York Skin and Cancer Hospital wishes it distinctly understood that it is not in accord with any of Dr. Bulkley's present notions of cancer.

HENRY H. WHITEHOUSE, M.D.,
CLARENCE A. MCWILLIAMS, M.D., New York.
President and Secretary, Respectively,
Medical Board, New York Skin and
Cancer Hospital.

THE MERCHANTS PROTECTIVE AGENCY, INC.

To the Editor:—Early last October, the Merchants Protective Agency, Inc., Kansas City, Mo., sent their representative, a man by the name of Wilson, to see me in regard to collecting my accounts. He told me that if I would give my claims to his company he would personally collect them. I told him that my experience with collection agencies had been very unsatisfactory in the manner in which most of them tried to collect claims through the mail with form letters; that if they could be collected that way I would have collected them myself. He assured me that as soon as he sent my list in to the company, and I verified them as being correct, the company would return the list to him and he would start to work on them at once. This is the last I have seen or heard of him.

I wrote the company just what this man had promised me and told them that if his statement was not correct, my contract was null and void and to return my claims to me. They made no reply to this letter, but after I threatened to take the matter up with the Post Office Department, they wrote that they would make every effort to collect my claims, but that it was impossible to send a man out to collect them personally. After they had had my claims about six months I asked them for a statement; this they did not give me, but in turn requested that I send them a statement of all claims that had been paid me. I complied at once; still they did not send me their statement. I wrote them again; no reply. I wrote them the third time, and they came back with the same request for another statement from me. I made one in red ink, with an affidavit, and wrote them that if they would let me know how many statements they required I would make them all at one time and send to them, as I was getting tired of being annoyed at their request. I then took the matter up with the post office inspector at Kansas City, Mo., giving him full details of the matter. He replied that he had investigated this company about six months ago, but was unable to get sufficient evidence to convict them.

They finally sent their report, and in this report they charged me $31 for tracing names of debtors that had settled their accounts in full with me, and as these accounts were paid promptly I know that this company had no tracing to do; also on names and addresses of my clients which were correct and are still living in this city. They also charged me 50 per cent. on all claims which amounted to $191.75, when their contract was 50 per cent. on the first $100 and 25 per cent. on all other claims. They closed their letter by requesting me to remit $11.37 at once which they claimed was due them.

I shall be glad if you will publish this letter so that other physicians may be posted in regard to this company.

B. A. OWEN, M.D., Perry, Okla.

"FRIENDS OF MEDICAL PROGRESS"

To the Editor:—At a recent meeting of the Medical Society of the County of Kings, Mr. Ernest Harold Baynes of the Friends of Medical Progress told us of the aims of that organization and showed us how it proposes to combat the vicious attacks on scientific medicine that are constantly going on everywhere in this country.

In the legislatures of almost all the states, there is an annual onslaught on medicine. In many states quackery is recognized and pseudoscience is given an opportunity to grow at the expense of the public health. The proponents of chiropractic are busy introducing a standardized bill in the legislature of every state in the Union. Year after year, the same organized effort is made to break down the bulwarks of quarantine, vaccination and scientific investigation.

A few weeks ago, at a legislative hearing in the assembly chamber of the state of New York, we heard a chiropractor, who stated that he was a member of the public health committee of the state of Iowa, loudly proclaim that they did not believe in bacteriology; nor did they believe in disease since all disease originates within one's own body. "If chiropractic is true," he said, "and we believe it is, then scientific medicine is a fake." God save the state of Iowa!

Scientific medicine is at its highest peak. It should need no support, but it does. Unlimited funds are at the command of all sorts of organizations that are trying to shape adverse public opinion.

We see in the Friends of Medical Progress a national body organized to inform the public of the truth concerning the value of scientific medicine. Here is an organization of laymen who are anxious to oppose legislation that is dangerous to public health. Here is a weapon ready forged for us. Let us all help to organize an active branch in our own community.

Who will initiate the movement? The county medical society. Why? Because it is a civic duty, and a responsibility that it may not shirk, to be always watchful of the public health.

In Kings County (Brooklyn) we have an active county medical society which eagerly accepts all its obligations to the public. We are behind a tremendous educational movement which is carrying postgraduate instruction to every physician in Brooklyn; cooperating with the Brooklyn Health Examination Committee, we are planning periodic health examinations on a scale never before attempted in this country; we have a great many civic contacts through our committees on public health and illegal practice, and we are actively supporting the Brooklyn Chamber of Commerce. In other words, we are teaching the public to look toward organized medicine. We must not forget that the county medical society is the unit, the live going part, of the American Medical Association.

We intend to organize in Brooklyn a branch of the Friends of Medical Progress, but we do not intend to move until we are properly ready to move on a large scale. Every county medical society can see it as we do, and every individual can help to get it going by interesting prominent citizens in the idea. The county medical society can get behind it, initiate it, stimulate membership, and turn it over to the responsible citizens of their own community. The public will be safe in their hands. Let us all help.

CHARLES A. GORDON, M.D., Brooklyn.
President, Medical Society of the County of Kings.

HEROIN LEGISLATION

To the Editor:—At the New Orleans session, the House of Delegates passed a resolution condemning heroin on the ground that it is a habit-producing drug. A bill has been introduced into Congress prohibiting the importation and manufacture of heroin, and the New Orleans resolution was presented as representing the opinion of the American Medical Association. This House Bill 7079 has been reported favorably by the Committee on Ways and Means of the House of Representatives, which body will in the near future vote on it and the bill will go to the Senate.

Fully recognizing that those who caused the introduction of this bill were animated by a desire to protect weaklings from the abuse of a remedy, as were those who put through the resolution at the New Orleans session, may we call attention to the fact that no regard has been paid to the needs of the worthy sick who are benefited by the administration of this drug? A large number of medical men find this drug the best for several purposes, notably for the relief of pain after operation, and we wish to protest against legislation in our own ranks, or in the halls of legislation, by which such medical men are to be deprived of a drug which long experience has taught them possesses value.

This is not a subject to be controlled by a vote. It is not even a question of what a majority may think. It is a question that involves the rights of a given number of physicians of wide experience to use a drug, the very existence of which today shows that it must have proved efficient or it would have been put in the discard long ago.

There is evidence to show that nearly all the heroin used by addicts is smuggled. The proposed legislation is, therefore, futile to protect the addicts, and only hampers the physician who needs every potent remedy he can obtain to control various forms of suffering. The plan is objectionable, because it is another step toward government regulation of personal privileges, and, again, because it intimates that it is through physicians that addicts are made or continued as such, which is untrue.

The Philadelphia County Medical Society has passed a resolution opposing House Bill 7079, and we hope that other societies or individuals will act promptly in communicating with their representatives in the House or with their senators, pointing out that this bill should be defeated on the ground that for every degenerate that uses heroin there are probably a hundred worthy sufferers who, under a physician's advice, get relief from its use.

HOBART A. HARE, M.D.,
Professor of Therapeutics and Diagnosis, Jefferson Medical College.
JOHN G. CLARK, M.D.,
Professor of Gynecology, University of Pennsylvania School of Medicine.
WARREN B. DAVIS, M.D.,
Otolaryngologist, St. Agnes Hospital.
BROOKE M. ANSPACH, M.D.,
Professor of Gynecology, Jefferson Medical College.
GEORGE B. WOOD, M.D.,
Professor of Laryngology, University of Pennsylvania Graduate School of Medicine.
Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DEMONSTRATION OF SPIROCHETE IN SPINAL FLUID

To the Editor:—In THE JOURNAL, March 8, p. 822, reference is made to a method by Wile and Kirchner for demonstrating *Spirochaeta pallida* in the cerebrospinal fluid. The method, it seems, consists in the application of a new staining procedure devised by Warthin and Starry to Alzheimer's method for determining the cell content of the spinal fluid. Please give a fuller description of this new method.

A. SANTOS, Sagua la Grande, Cuba.

ANSWER.—Alzheimer's method consists in treating spinal fluid with 96 per cent. alcohol, and then centrifugating at high speed to throw down a firm clot of the albuminous and organic solids. The clot is then treated with alcohol, with ether, then embedded, sectioned, submitted to ordinary pathologic technic, and stained with various dyes in order to study the cell content of the spinal fluid. It occurred to Wile and Kirchner that if spirochetes were present in the spinal fluid they would also be thrown down by this method, and that if properly embedded and stained they might be demonstrated. Rapid centrifugation, however, breaks up spirochetes, and it was necessary to substitute a protein coagulant which would produce a sufficiently firm clot without rapid centrifugation. For this purpose the authors added kaolin to the spinal fluid and allowed it to settle. They also used aluminum cream, which is thus prepared: Ordinary alum is treated with ammonium hydroxid, precipitated out, and the precipitate washed by decantation until no further ammonia is given off and no further test with litmus paper for ammonia in the water is obtained. When the water is no longer alkaline, the jelly is complete. Among 115 spinal fluids examined in this manner, there were positive findings in nine, and suggestive findings in three.

QUESTIONED PARENTHOOD

To the Editor:—In the case in question, the first sexual intercourse is said to have taken place, Oct. 8, 1922. October 20, the menstrual period having passed, without menstruation, the woman consulted her physician, who told her that a diagnosis of pregnancy could not be made. The next month, November 20, the menses not having appeared during November, she again consulted the physician, who at that examination said he could then diagnose, and pronounced her pregnant. A fully developed child, after normal delivery, was born, June 18, 1923. In your opinion, was this child begotten as a consequence of the first sexual intercourse, Oct. 8, 1922?

A. J. K., Ill.

ANSWER.—In its simplest form, this question is, "Can gestation normally run its course in 254 days immediately following the sexual intercourse from which it arises?"

Dorland says that normal gestation may last but 240 days, and that in some women eight calendar months is the full time; but whether these periods are computed from the date of intercourse, from the hypothetic date of conception, or from the date of the cessation of menstruation, he does not

say. He quotes Montgomery as reporting one case in which labor occurred between the two hundred and thirty-ninth and the two hundred and forty-fifth day after the fruitful intercourse, and two cases in which it occurred between the two hundred and fifty-third and the two hundred and fifty-ninth day (Peterson, Haines and Webster: Legal Medicine and Toxicology, Ed. 2, **1**:951-952, 1923).

Winckel, after studying more than 5,000 cases, concluded that gestation may vary from 240 to 320 days, dated from the effective intercourse (Wood: Reference Handbook of the Medical Sciences, Ed. 4, **4**:68, 1923). In every case of apparently brief gestation, the possibility of prematurity by a few days or a week or so, undiscoverable by the average observer, if at all, must be borne in mind.

"PAINODYNES"

To the Editor:—I should like to ask your scientific laboratory what the so-called "tried and true neurodyne (ortho-hydroxybenzoic acetic acid ester)" put out in Painodyne tablets by the Wm. A. Webster Company, Memphis, Tenn., really is, if of known identity. It seems to me that I have seen a statement that salicylic acid is, chemically, ortho-oxybenzoic acid, and I strongly suspect that neurodyne is nothing less than our old friend, aspirin, or acetylsalicylic acid. Am I right?

A. A. RANKIN, M.D., Brownton, Minn.

ANSWER.—An advertising circular describes painodynes as "an organic compound containing neurodyne 5 grains, theine citrated ½ grain, combined with triple bromides, ½ grain." The circular does not disclose the composition of neurodyne, or of the "triple bromides" which are claimed to be present in the mixture. Thein is another name for caffein, and hence, "theine citrated" is no doubt intended for the well known citrated caffein.

The preparation is evidently an irrational "shotgun" mixture, marketed with unwarranted claims. For this reason our laboratory has not considered it necessary to make an analysis of the product. Tests have been made, however, which show the product to contain relatively large amounts of acetylsalicylic acid.

THE "YALE ANALYSIS BUREAU"

To the Editor:—A patient in whom I am interested has had a urine sample analyzed by the Yale Analysis Bureau of New Haven, Conn., and he has been given the impression that this bureau is connected with Yale University. An examination of their report of laboratory findings makes me feel that there can be no possible connection between the university and this concern, and makes me suspicious of its standing. I would appreciate a report from you at an early date regarding this matter.

JUSTIN A. GARVIN, M.D., Cleveland.

ANSWER.—The Yale Analysis Bureau was incorporated, according to the Secretary of State of Connecticut by Dwight E. Hamilton, Michael J. Quinn and Anna M. Hamilton. There is one D. E. Hamilton, a chiropractor of New Haven, who advertises extensively in the New Haven *Register*. Part of his advertising paraphernalia consists in publishing an alleged signed and sworn statement from a man named Bell. Some of the claims made in this sworn statement were investigated by the Propaganda Department and found to be wholly and utterly false. It is hardly necessary to say that the "Yale Analysis Bureau" has no more connection with Yale University than has Chiropractor Hamilton. Doubtless the name was adopted to give the concern an air of erudition and respectability.

PERITONITIS WITH UNRUPTURED APPENDIX

To the Editor:—Is it possible to have general peritonitis with free pus in the abdominal cavity from appendicitis, with an unruptured appendix? I have recently had a case in which all the early symptoms pointed to an upper abdominal lesion. I advised opening the abdomen, and expressed the belief that the trouble was either the gallbladder or a ruptured gastric or duodenal ulcer. A general peritonitis developed, and the patient became worse instead of improving as the friends predicted. A consultant was called, and he very promptly and emphatically made a diagnosis of appendicitis. An operation was performed and pus was found; the appendix and intestines were inflamed, but the appendix was not ruptured. The consultant who operated smiled with satisfaction on seeing the pus and when the appendix was found unruptured he sobered, but stated that this appendix was the cause of the trouble anyway. I am unable to believe the appendix was the cause of the general peritonitis with free pus and yet be unruptured, and desire information.

M. O. B., M.D.

ANSWER.—Generally speaking, it is possible for peritonitis to develop from appendicitis without rupture of the appendix.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

DELAWARE: Wilmington, June 17. Sec., Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Ocala, June 16-17. Sec., Dr. W. M. Rowlett, Citizens Bank Building, Tampa.

GEORGIA: Atlanta and Augusta, June 4-6. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 24-27. Supt. of Regis., Mr. V. C. Michels, Springfield.

IOWA: Iowa City, May 29-31. Sec., Dr. Rodney P. Fagen, Capitol Building, Des Moines.

KANSAS: Topeka, June 17. Sec., Dr. A. S. Ross, Sabetha.

KENTUCKY: Louisville, June 9. Sec., Dr. A. T. McCormack, 532 W. Main Street, Louisville.

LOUISIANA: New Orleans, June 12-14. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MARYLAND: Baltimore, June 17-20. Sec., Reg. Bd., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore; Sec., Homeo. Bd., Dr. E. H. Wilsey, Chesapeake City.

MICHIGAN: Ann Arbor, June 10-12; Detroit, June 16-18. Sec., Dr. B. D. Harison, 707 Stroh Bldg., Detroit.

NEBRASKA: Omaha, June 18-20. Supt., Dr. J. D. Case, Terminal Building, Lincoln.

NEW JERSEY: Trenton, June 17-18. Sec., Dr. Alexander MacAlister, State House, Trenton.

NORTH CAROLINA: Raleigh, June 23. Sec., Dr. Kemp P. B. Bonner, Raleigh.

NORTH DAKOTA: Grand Forks, July 1-4. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, June 3-6. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

OREGON: Portland, July 1-3. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.

SOUTH CAROLINA: Columbia, June 24. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

TENNESSEE: Memphis, June 13-14. Sec., Dr. A. B. De Loach, 434 Madison Ave. Bldg., Memphis.

TEXAS: Austin, June 17-19. Sec., Dr. T. J. Crowe, 918-19 Mercantile Bank Building, Dallas.

VERMONT: Burlington, June 25-27. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 17-20. Sec., Dr. J. W. Preston, 720 Anchor Building, Roanoke.

WISCONSIN: Milwaukee, June 24-26. Sec., Dr. J. M. Dodd, 220 E. Second Street, Ashland.

WYOMING: Casper, June 5-11. Sec., Dr. J. D. Shingle, Citizens Bank Bldg., Cheyenne.

EXPERIENCES WITH MEDICAL CLINICS TO THE FIRST YEAR CLASSES*

O. H. PERRY PEPPER, M.D.
PHILADELPHIA

This is intended, not as a paper of discussion, but rather a report of experience. It is not a presentation of the arguments for or against the giving of actual patient clinics to the first year class, although I should at once state that I am strongly partisan in their favor.

The introduction of such hours into the first year curriculum is in line with certain tendencies in modern medical education which have been frequently commented on at meetings of this association in the last few years and which need no discussion in the present connection.

PURPOSE OF THE CLINICS

Specifically, some of the results to be hoped for from clinics to the first year class may be thus enumerated:

1. The student will be convinced from the outset that what he is learning in the courses on anatomy, physiologic chemistry and physiology is actually of practical importance and of everyday usefulness to the physician and surgeon.

2. The realization that he is a student of medicine in its all embracing sense and that there is no hour in the whole curriculum which is not aimed at this end will be instilled as early as possible into the student.

3. The development of the student's clinical sense and experience will commence as early as possible and he will be started right on the road of kindly dealing with patients.

4. The teachings of the anatomist, chemist or physiologist on topics of limited interest to them but of greater interest to the clinician will, at times, be amplified.

* Read before the Association of American Medical Colleges at Omaha, Feb. 28, 1924.

5. The principles of medical terminology will be taught as words occur in the course of the lectures.

6. Lastly, the interest of the students in their work will be stimulated, their appetite for medicine will be stimulated and their curiosity excited.

Some of this undoubtedly is, and perhaps all of it might be, accomplished by the teachings of the so-called fundamental branches, but it is probably more successfully carried out in a hospital and by a clinician. The mere fact that the clinicians in the hospital are familiar with the fundamental sciences carries conviction to the students as to the value of the matters which constitute his daily tasks at that particular time.

It is to be remembered that there is a growing number of nonmedical professors and assistants teaching the preclinical branches today. These men naturally vary in their ability to give at least a medical flavor to their courses. Probably the value of medical clinics will be greater in schools where one or more of the preclinical courses are given by teachers who do not hold the degree of M.D.

A great deal is expected of our first and second year students, often I think, too much; and anything that can be done to help them understand what it is all about and to make the courses a little more digestible seems worth while. This, such clinics tend to do, I believe.

RESULTS OBTAINED

I have said that this was to be a report of experience, but it must be stated at once that our experience has been limited to a year and a half. This means that, in the Medical School of the University of Pennsylvania during the school year of 1922-1923, one clinic a week was given to each of the two lower classes, and this has been continued so far in the year 1923-1924.

The subjects with which correlation has been attempted in the case of the first year class are anatomy, physiology and physiologic chemistry. Anatomy continues throughout the whole first year, while physiologic chemistry and physiology each continues for but one half of the first year, so that it is probable that more clinics will be correlated with anatomy than with the other subjects. However, of the twenty-eight clinics given in the school year 1922-1923, nine were correlated with the course in physiology, eight with anatomy, six with chemistry, and five could not properly be said to be correlated with one or the other. This division was not intentional, but was simply the result of the use of whatever clinical material at hand seemed most suitable. About the same division seems to be occurring this year.

Much, of course, depends on the clinical material available, for the presentation of a patient seems to be an absolutely essential feature. It would seem to be better to discuss one's second choice of subject well illustrated by one or more patients than to discuss one's first choice without. Twice, a lantern demonstration replaced patients, and once necropsy material was employed.

The lecturer must keep informed as to the topics being considered in the other courses from week to week, as it adds greatly to the value of the clinic if it is correlated with a topic being concurrently considered. For this reason, it seems best to place the clinic toward the end of the week. Knowing the week's topics, the lecturer can then look for suitable clinical material in the hospital wards.

SUBJECTS CHOSEN

The subjects of some of the clinics that have been given, commencing with those based on the course in anatomy, have been:

1. Enlarged superficial lymph nodes: the importance of a knowledge of the anatomy of the lymphatics; illustrated by cases.

2. Dilated peripheral veins: the importance of anatomy in understanding their production and significance; illustrated by a case of varicose veins of the legs, and a case of obstruction of the superior vena cava.

3. Anatomy of the skull: its bearing on the explanation of a case of septic meningitis, resulting from extension of a throat infection to the middle ear, and thence to the lateral sinus and meninges; illustrated by necropsy material and anatomic specimens.

4. Anatomy of the skull: its value in the analysis of a case of ophthalmoplegia, localizing the involvement of the third, fourth, sixth and the ophthalmic division of the fifth cranial nerve in the sphenoidal fissure, due to the metastasis of a tumor from the femur.

5. Anatomic explanation of the symptoms of aortic aneurysm as illustrated by a case with laryngeal paralysis, inequality of pupils, etc.

Among the clinics correlated with physiologic chemistry, the following will serve as examples:

1. The clinician's use in diagnosis and treatment of the methods of measuring the acid-base equilibrium of the body, as exemplified by the blood p_H and plasma carbon dioxid in diabetes, mild and severe.

2. Value of studies of enzymes in practice, as illustrated by a patient with achylia gastrica.

3. Patients exhibiting altered uric acid metabolism; illustrated by a case of leukemia with high uric acid output, a case of nephritis with uric acid retention, a patient with a uric acid calculus, and a normal rabbit that excretes no uric acid.

When, in the course in chemistry, protein metabolism was under consideration, cases of emaciation were shown. When the thyroid was the subject of lecture by the chemist, cases of goiter and postoperative tetany were made the subject of that week's clinic.

Parenthetically, let me say that as the member of the National Board of Medical Examiners concerned with the examination in physiologic chemistry, I have been impressed, after studying the questions set in the course in this subject being given in the various Class A schools of this country, that the courses apparently vary greatly in type, more so, I imagine, than is the case in any other subject. Topics that occupy a chief position in the course at one school are given but little emphasis at another; the same is true both of lectures and of laboratory work. One reason for this state of affairs is that, in the time allotted to the course in physiologic chemistry, it seems to be difficult or impossible both to supply the requisite amount of fundamental physical chemistry, which most of the students lack on admission, and to emphasize the biologic applications of the various phases of the work. This is not the place to discuss this matter, except to say that it is much easier to correlate clinics with a course in which the biologic aspects of each topic are fully considered. Perhaps the best way to make such a course possible would be to require more adequate premedical training in physical chemistry.

COURSES ADAPTED TO CLINICAL ILLUSTRATION

The topics in physiology are well adapted for clinical illustrations. An hour was spent discussing the pulsations in the neck in a case of heart block, and another discussing the relation of oxygen unsaturation of the blood to the cyanosis of several patients.

The value of basal metabolism estimations was easily illustrated, and clinics on dyspnea and edema were given at appropriate times. When the physiology of the nervous system was being studied, a clinic on peripheral reflexes and one on cerebral lesions, such as apoplexy, was arranged.

Occasionally, it seemed impossible to illustrate the subjects of that week's work in anatomy, physiologic chemistry or

physiology; then unrelated topics were selected; for example, a clinic was given on anemia and pallor, one on gross pathologic lesions, such as Hodgkin's disease or aneurysm, and the last clinic of the year was arranged to emphasize the fact that the fundamental sciences are important aids in diagnosis and in treatment. The patients shown included one with Hodgkin's disease being treated with the roentgen ray; one with syphilis receiving arsphenamin; one with pleural effusion requiring aspiration and one with achylia relieved by hydrochloric acid.

DIFFICULTIES CONFRONTING THE TEACHER

The difficulties of the teacher in presenting this course of clinics are considerable. He must be extremely careful in his use of words, constantly remembering that the students have as yet no medical vocabulary at all. In one lecture, my failure to define the word effusion led to a general misunderstanding. Not only must every new word be explained, but the best results can be obtained only by using the same words, phrases, standards or diagrams that are being used by the teacher in the course with which the clinic is being correlated.

This matter of terminology may seem a small one, but, in my opinion, it is perhaps the one most important item in the success or failure of such clinics. Practically no sentence of the usual hospital history can be read without modification.

I spent some time at first in putting the derivation of new words on the blackboard in Greek script only to discover that only a small number of the students knew Greek letters other than those of their own fraternities.

On the other hand, these first year students are often more conversant than the lecturer with the details of certain phases of the preclinical subjects. They acquire a transitory familiarity with formulas, quotients, insertion of muscles, and the like, and the lecturer would destroy some of the desired effect if he should exhibit ignorance of any of these facts. Several fourth year students who dropped in at these first year lectures admitted that some of it was "too deep" for them. It is a somewhat anomalous situation; one may discuss elaborate chemical or physiologic matters, but one's vocabulary outside the immediate topic must be carefully limited or defined.

Similarly, the details of physical examination are wholly unknown, and the routine clinical laboratory examinations, such as blood counts, cannot be referred to without explanation.

If, however, the clinic does not "get across," it is not the fault of the audience but of the lecturer. No student audience ever tried harder or appeared more interested than do the first year class at these clinics. It is their first taste of the real thing, and they are avidly attentive. There is no question that these clinics are enjoyed; they could scarcely be so badly conducted as not to be. But this is not enough to justify their existence and the giving up of an hour a week to them. Final judgment must depend on the proof that the students gain more than entertainment from these hours. This is hard to prove; the students say they do, and the upper classmen seem to think that their juniors are getting something. I myself believe that the clinics are worth while.

The teachers in the preclinical branches with which these clinics are correlated have been noncommittal thus far; they have not told me that they had observed any good results, but apparently in theory they approve.

SECOND YEAR CLINICS

A further effort at correlating the preclinical sciences with clinical work is made in the second year by means of weekly clinics. These differ somewhat in plan from those of the first year.

In the first year, the student, in addition to a background of biology and a little organic chemistry, has as yet only a superficial and detached knowledge of anatomy and chemistry. The clinics in that year must therefore be restricted to the clinical demonstration of an isolated chemical problem or perhaps of certain aspects of a given case. The second year student, on the other hand, in addition to anatomy and chemistry, has some knowledge of physiology, is accumulating facts in pathology, and is taking his first steps in clinical branches, physical diagnosis and pharmacology. His medical vocabulary has grown in proportion. The scope of the clinics can therefore be greatly widened. A given disease condition is presented, and, largely by questions put to the students, the effect of the lesion on other parts of the body is traced in terms of deranged physiology, and these in turn are translated into symptoms. Gradually, a conception of a disease picture is built up.

PRACTICABILITY

These first and second year clinics can be given at any school having convenient hospital facilities, and there is probably no reason why they should not be attempted even where clinical material is limited. Of course, a large supply of material is needed to be able always to illustrate just what one wishes; but, with forethought and preparation, something could be done with very limited hospital facilities. There is no reason why such clinics should not be given in the two year schools, and there is this added argument in their favor. In the four year schools, the first and second year students have from time immemorial gone to some of the medical and surgical clinics given to the upper classes and have obtained in this way some taste of clinical matters; this is usually impossible in two year schools.

It is interesting at the end of each clinic to hear the many questions asked. Here, one recognizes a physician's son; here, an ex-laboratory technician. I had not expected to hear from the first year class, although perhaps I should have, that request familiar to all clinical teachers, "Couldn't you devote a little more time to the treatment?"

Finally, I may say that it is for the lecturer a very beneficial course of lectures to give; he has to take a sort of postgraduate course in chemistry, physiology and anatomy, and, even if he fails to accomplish much for the first year class, he at least better prepares himself to teach the upper classes and to practice medicine.

906 Medical Arts Building.

Pennsylvania January Examination

Dr. J. George Becht, acting secretary, Pennsylvania Bureau of Medical Education and Licensure, reports the written and practical examination held at Philadelphia, Jan. 29 to Feb. 2, 1924. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 64 candidates who were examined, 59 passed and 5 failed. The following colleges were represented:

PASSED College	Year Grad.	Number Licensed
George Washington University	(1916), (1922)	2
Howard University	(1922, 3)	3
Tulane University	(1922)	1
Baltimore Medical College	(1902)	1
College of Physicians and Surgeons, Baltimore	(1890), (1892), (1907), (1911)	4
University of Maryland	(1912)	1
Harvard University	(1921, 2)	2
University of Minnesota	(1922)	1
University Medical College of Kansas City	(1906)	1
Eclectic Medical College	(1922)	1
Hahnemann Medical College and Hospital of Philadelphia	(1921), (1922, 3)	4
Jefferson Medical College	(1918), (1921, 2), (1922, 3)	6
Temple University	(1922, 2)	2
University of Pennsylvania School of Medicine	(1917), (1921, 9), (1922, 6)	16
University of Pittsburgh	(1920)	1
Woman's Medical College of Pennsylvania	(1921), (1922, 2)	3
University of Tennessee	(1921)	1
Queen's University Faculty of Medicine	(1922)	1

University of Toronto Faculty of Medicine	(1921), (1922, 2)	3
McGill University Faculty of Medicine	(1920)	1
University of Bishop College Faculty of Medicine	(1894)	1
National University, Athens, Greece	(1905)*	1
University of Budapest, Hungary	(1920)*	1
University of St. Vladimira, Kief, Russia	(1916)*	1

College	FAILED	Year Grad.	Number Failed
Eastern University School of Medicine		(1913)	1
Leonard Medical School		(1907)	1*
Woman's Medical College of Pennsylvania		(1922)	1
Chattanooga Medical College		(1920)*	1
University of Berne, Switzerland		(1918)*	1

* Graduation not verified.

Dr. Becht also reports that 5 candidates were licensed by reciprocity and 4 candidates were licensed by endorsement of credentials from Jan. 1 to March 15, 1924. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Illinois		(1918)	Illinois
Johns Hopkins University		(1910)	New York
University of Michigan Medical School		(1909)	Michigan
Columbia University		(1918)	New York
University of Texas		(1918)	Texas

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Pennsylvania		(1921), (1922)	N. B. M. Ex.
Woman's Medical College of Pennsylvania		(1922, 2)	N. B. M. Ex.

Kansas February Examination

Dr. A. S. Ross, secretary, Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, Feb. 12-13, 1924. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. Sixteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University		(1923)*	92
Rush Medical College		(1923)*	88.4
College of Physicians and Surgeons, Keokuk		(1890)	88.1
Tennessee Medical College		(1894)	90
University of Tennessee		(1906) 88, (1912)	89.1
McGill University Faculty of Medicine		(1923)	93.1
University of Munich, Germany		(1922)†	83

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1912)	Illinois
Loyola University		(1916)	Missouri
Northwestern University		(1923, 2)	Illinois
Rush Medical College		(1900)	Illinois
State University of Iowa		(1890)	Iowa
Tulane University		(1903)	Tennessee
University of Minnesota		(1921)	Minnesota
Marion-Sims-Beaumont Medical College		(1902)	Missouri
St. Louis College of Physicians and Surgeons		(1904)	Missouri
Lincoln Medical College of Cotner University		(1898)	Nebraska
University of Nebraska		(1923, 2)	Nebraska
Starling-Ohio Medical College		(1911)	Indiana
University of Oklahoma		(1923)	Oklahoma
Jefferson Medical College		(1921)	Penna.

* These candidates have completed their medical course and will receive their M.D. degrees on completion of a year's internship in a hospital.

† Graduation not verified.

South Dakota January Examination

Dr. H. M. Kenaston, director, South Dakota Division of Medical Licensure, reports the oral, written and practical examination, held at Pierre, South Dakota, Jan. 15-16, 1924. The examination covered 15 subjects and included 100 questions. An average of 75 per cent. was required to pass. Eleven candidates were examined, all of whom passed. Six candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Colorado		(1900)	81.8
Northwestern University Medical School		(1909)	89.2
State University of Iowa College of Medicine		(1914) (1922) 85.5	85.4
Johns Hopkins University Medical Department		(1922)	82.4
St. Louis University School of Medicine		(1923)	84.5
Creighton Medical College		(1922)	85.1
Omaha Medical College		(1899)	85.6
University of Nebraska College of Med.		(1902) 84.3, (1910)	86.2
Jefferson Medical College of Philadelphia		(1922)	85.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Minnesota Medical School		(1901) (1915, 2)	Minnesota
University of Nebraska College of Medicine		(1902) (1921)	Minnesota California
Trinity Medical College, Toronto		(1901)	N. Dakota

Book Notices

OPERATIVE SURGERY, COVERING THE OPERATIVE TECHNIC INVOLVED IN THE OPERATIONS OF GENERAL AND SPECIAL SURGERY. By Warren Stone Bickham, M.D., Phar.M., F.A.C.S. In six volumes. Cloth. Price, $10 per volume. Volume I. Pp. 850, with 921 illustrations. Volume II. Pp. 877, with 1,088 illustrations. Volume III. Pp. 1001, with 4,368 illustrations. Philadelphia, W. B. Saunders Company, 1924.

The first three volumes of this work are impressive in that never before has the subject of operative surgery been considered of sufficient importance, apparently, to demand such extensive treatment. Furthermore, this is the work of one man, so far as the text is concerned, no one but the author having had any part in its preparation. This work is offered as an enlarged exposition of the author's one volume Operative Technic, the enlargement concerning not alone the text, but especially the number of illustrations, of which there are 6,378, many in colors, prepared by a large staff of artists. At first glance, the impression is conveyed that, in order to make so much manuscript, much useless material would have to be included; but such is not the case. The author describes not all, but the chief, operations on the chief (not all) organs, tissues and parts of the body, operative surgery being the special field of this work. The clinical history of cases is not discussed in any of its aspects; therefore this is not a mixture of general surgery or surgical principles, but an operative surgery. This term is defined as "the application of the principles of operative technic and the knowledge and use of applied anatomy." Equal importance is given to all departments of operative surgery on the basis that a broad general understanding of the underlying principles of the standard operations in even the special fields—ophthalmology, urology, obstetrics, gynecology—should be a part of the equipment of the well posted general surgeon. Hence the chief operative technics in those fields are included.

The subject matter of these volumes is divided into three parts or divisions: (1) general procedures employed in surgical operations; (2) general operative surgery, and (3) special operative surgery. Each chapter is planned on an anatomic basis. A very commendable feature is the naming of the operations. While the author is very particular to give credit to whom credit is due, yet he keeps in mind the inutility of eponymic terms; therefore, the operation is given its proper descriptive name and then the term of the accredited originator, if there is one, is appended; for instance, "appendicectomy, by the intramuscular method, McBurney"; "interscapulothoracic disarticulation of the upper limb, together with the scapula and part of the clavicle by antero-inferior (or pectoromaxillary) and posterosuperior (or cervicoscapular) flaps, Berger." Thus, the designations are surgical descriptions of the technic, anatomic designations, and are properly accredited. In dealing with each group of tissues or class of operation or individual organ, the subject is taken up in a thoroughly systematic manner. Condensed outlines of the surgical anatomy involved in the different regions and organs are included and given in advance of each part under consideration to serve as a reminder. This includes "surface formation and landmarks." Then follow the general surgical considerations and the description of the operation or operations. This is done in a most commendable way. The so-called "best" method or methods are described, but all other methods—and sometimes there are many—are named, thus making the information complete as well as instructive.

Much space—and to good advantage—is given to the preparation of the patient and operation site, the position of the patient, surgeon and assistant, and the postoperative care. Three hundred and fifty pages are devoted to this usually much neglected, but essential, part of an operation. Especial attention is given to the making of an incision and to its closure. This chapter is well illustrated. The subjects of skin grafting, reformative, reconstructive or plastic surgery, the use of hydrocarbon prostheses, kineplastic amputations and kinematic prostheses are deserving of special mention. That type of surgery has not received much consideration in modern textbooks, but has, nevertheless, owing to the war,

come into prominence in the last half decade. The author evidently had this in mind, and has therefore devoted much space to the subject. A most interesting chapter is that given over to the description of artificial limbs, their indications, uses and method of application or adjustment, information which the up-to-date surgeon should have, but which, too often, he considers to be outside his domain. These matters should not be left to the manufacturer of such apparatus. The surgeon should supervise every step in every case until the final discharge of the patient, assuming the responsibility that is rightly his if his service is to be adequate.

The second volume covers the operative technic involved in operations on blood and lymph vessels, nerves, bones, joints (other than excisions), muscles, tendon and tendon sheaths and fascia, and the special operative surgery of the skull, brain, spine and spinal cord.

The third volume is devoted to the discussion of the operative surgery on many organs, such as the eyes, ears, nose, cheek, tongue, thyroid, chest and its contents, and neck.

As these volumes represent the thought and work of one person, their contents must be accepted as representing his convictions. Things that have been omitted and that to the reader might seem to deserve mention evidently did not seem of sufficient interest or value to the author to be included. Perhaps they are still debatable or *sub judice*. He has tried to present accepted facts, and in such a way as to leave little or nothing to wish for. A great deal of information is given, in a concise and methodical manner, and so well illustrated that there is no room for doubt as to what is meant. There is so much to commend and so little to condemn that the work is deserving of hearty commendation. The mechanical features deserve mention. The printing and paper are good; the binding is firm and attractive; the illustrations have already been spoken of as being numerous and excellent.

ADOLESCENT INTERESTS. A Study of the Sexual Interests and Knowledge of Young Women. By F. I. Davenport, Ph.D. Paper. Price, $1.25. Pp. 62. New York: G. E. Stechert & Co., 1923.

Preliminary to a course of sex instruction in a training school for teachers, a group of 160 young women, high school graduates, were invited to submit anonymously questions they would like to have answered during the course of instruction. The 880 questions asked have been submitted to analysis, the results of which are presented in this volume. The group is not representative of the average young woman, but is selected from those who have presumably had good opportunities for instruction and who have, on the whole, somewhat higher cultural ideals. The analysis reveals an interest "directed preponderantly toward the primal manifestations of sexual feelings and tendencies, rather than toward love, marriage, and prospective parenthood." This is viewed as a serious criticism of our educational and social policies, which fail to provide specific training for marriage and parenthood. The questions certainly reveal a striking ignorance of elementary biologic facts, but it may be questioned whether the method of the investigation did not tend to emphasize the primitive rather than the social aspect of sex life by giving the opportunity to avoid the customary social tabu on the primitive tendencies. Whatever the truth of this aspect may be, the results here recorded and briefly discussed are a valuable contribution for the educator and the physician who is concerned with studies of behavior.

CANCER DU RECTUM. Par André Chalier, Professeur agrégé à la Faculté de médecine de Lyon, et Henri Mondor, Professeur agrégé à la Faculté de médecine de Paris. Paper. Price, 40 francs net. Pp. 601, with 105 illustrations. Paris: Gaston Doin, 1924.

This work is the fourth of a series, "The Library of Cancer," under the supervision of Professor Hartmann of Paris and Professor Bérard of Lyons; thirteen more are in preparation, covering other organs and parts of the body. It has all the earmarks of having been prepared a decade or so ago, and having lain fallow since. Almost all the references antedate the war, the figures from the Mayo Clinic, for example, being for 1908, when a series of only twenty-six cases was recorded; those for 1915, the latest we find, total 430. Moreover, it is top-heavy; of the 471 pages devoted to carcinoma, 300 are taken up with operative treatment. The authors are firm advocates of the combined method, and give a full account of the technic, as well as describing numerous modifications, many of which fit into the ever-increasing class of "operative gymnastics." Also the perineal and sacral methods are elaborated and adequately illustrated. The application of radium (or "curietherapy," as it is called in France) has not been very successful, there being only three cures in thirty-two cases in Bérard's clinic. In addition to the section on carcinoma, there is another on sarcoma (ninety-six pages) and a bibliography of thirty-three more. The bibliography has the national failing of being confined too much to indigenous products, of the 745 references, nearly a half (350, to be exact) being to works of French authors, though this practice is vigorously criticized by Gallic writers when coming from other nationalities. The list contains the usual ridiculous errors when foreign names are transcribed —Swinford for F. Swinford Edwards; Fiskejones for Daniel Fiske Jones, and so on. The authors, to corroborate their assertions, quote an inaugural thesis by Finet, dating back to 1896. Though the paper is none too good, most of the photogravures are clear, especially those on gross pathology. We fear that the work as a whole cannot be looked on as marking any advance in our knowledge of malignant growths in the rectum and their treatment.

BEGINNING AGAIN AT ARARAT. By Mabel Evelyn Elliott, M.D., Medical Director of Near East Relief. With Introduction by John H. Finley. Cloth. Price, $2. Pp. 341, with 11 illustrations. New York: Fleming H. Revell Company, 1924.

The author was medical director of Near East relief work. After the disaster at Smyrna, she took charge of relief among the refugees. She had charge of quarantine stations built on the Islands of Makronissi, as well as hospitals and camps for 6,000 persons. She has received several decorations from the Greek government, and has worked in Armenia, Turkey, Asia Minor and Greece. Her book begins with her arrival in Armenia. The second chapter is the story of the hundred and fifty Armenian girls rescued from Turkish harems, who were so widely exploited in the sensational press some time ago. Dr. Elliott writes well, and she enlivens her descriptions with numerous personal incidents. All of those who have contributed to Near East relief will be interested in learning how their money has been spent and of the vast amount of good that has been done by the self-sacrificing physicians and other workers who have devoted their lives to this charitable service. To read the account as prepared by Dr. Elliott is to read an attractive report.

INTRANASAL SURGERY. By Fred J. Pratt, M.D., F.A.C.S., Assistant Professor, Eye, Ear, Nose and Throat, Medical School, University of Minnesota, and John A. Pratt, M.D., F.A.C.S., Assistant Professor, Eye, Ear, Nose and Throat, Medical School, University of Minnesota. Cloth. Price, $5 net. Pp. 334, with 195 illustrations. Philadelphia: F. A. Davis Company, 1924.

The authors start out with the anatomy of the nose, its function, and the diseases of the nasal chambers. They emphasize the fact that they are dealing only with cases that may lead to or indicate surgical intervention, and therefore they do not mention in detail the medical matters as well as those local conditions which are treated topically or systemically. With reference to atrophic rhinitis, epistaxis and septal ulcerations, a few surgical measures are proposed. The anatomy and embryology of the nasal septum, together with submucous resection, are treated in great detail. The authors employ paraffin injections when there is a slight dip in the nasal bridge, but we are inclined to feel that the use of even a small amount of paraffin may be deleterious, as evidenced by many cases in the literature regarding embolism and paraffinoma following the use of paraffin injections. Speaking of the various sinuses, the embryology is outlined and the anatomy carefully stated. The operative procedures are illustrated by numerous drawings, most of them original. The authors describe carefully their method of opening the anterior and posterior ethmoidal cells, as well as the sphenoid sinus with the preservation of the middle turbinated body. They advocate the most conservative handling of the middle turbinate but opening of the ethmoid cells as completely as possible. Many operators freely sacrifice the middle tur-

binate, since they do not ascribe to it the importance in the proper functioning of the nose that these authors do. The more radical operators also feel that a proper inspection of the field of operation and of the condition of the ethmoid and sphenoid cells is not possible if the middle turbinate is preserved. At the end of the book, a series of coronal sections and descriptions is given. The authors state that "a polyp is not a new growth but an inflamed overgrowth of the part of which it originates." It has long been a dispute among pathologists as to whether nasal polyps are really only edematous mucosa or whether they are true myxomas. Large, clear type, numerous and excellent illustrations, and clear, simple wording make this a very readable book: one that is full of information and that should prove of interest to the student and to the specialist alike.

HOSPITAL CORPS HANDBOOK, UNITED STATES NAVY. 1923. Published by The Bureau of Medicine and Surgery, under the authority of the Secretary of the Navy. Cloth. Price, $1. Pp. 717, with 210 illustrations. Washington: Government Printing Office, 1923.

This book represents the basic course of instruction given to members of the hospital corps of the navy. It is an epitome of certain subjects that are fundamental in the development of men who perhaps know little about the care of the disabled into hospital corpsmen generally fitted to assist or especially trained so as to be expert in some department. There is a chapter on anatomy and physiology, first aid and minor surgery, bandaging, nursing, physiotherapy and anesthesia. Preventive medicine and sanitation are condensed in one long chapter, which in parts is a mere outline. It is understood that lectures and demonstrations in training schools and on board ship fill in these gaps. Materia medica, toxicology, bacteriology and parasitology are briefly summarized with special reference to the navy. The book ends with chapters on the administration of naval hospitals, the organization of the hospital corps, clerical duties and procedures.

MENTAL HYGIENE AND THE PUBLIC HEALTH NURSE. Practical Suggestions for the Nurse of Today. By V. May MacDonald, R.N. With a foreword by Thomas W. Salmon, M.D., Professor of Psychiatry, Columbia University. Cloth. Price, $1.50. Pp. 66. Philadelphia: J. B. Lippincott Company, 1923.

This little book cannot be considered as a textbook on the subject of mental hygiene. It will, however, serve to stimulate a realization of the need for study in this much neglected field on the part of nurses, teachers and parents in general. It is written in simple, nontechnical style, and brings home forcibly the extent and economic importance of mental disorders as well as their relation to the sum of human happiness. Common faults in the training of children in habits of conduct, early danger signals of the existence of mental maladjustment, and the nature of common forms of mental disorder are outlined clearly and briefly. With these descriptions is given a list of references to works dealing more extensively with the various topics, which have been admirably selected with a view to their suitability for the readers to whom this book will appeal.

DIAGNOSTISCHE UND THERAPEUTISCHE IRRTÜMER UND DEREN VERHÜTUNG. Chirurgie. Herausgegeben von Prof. Dr. J. Schwalbe, Geh. San.-Rat. Elftes Heft: Verletzungen und chirurgische Krankeiten der unteren Extremität. Von Professor Dr. Erich Sonntag, Vorstand des Chirurgisch-poliklinischen Instituts der Universität in Leipzig. Paper. Pp. 203, with 25 illustrations. Leipsic: Georg Thieme, 1923.

This little volume on the prevention of mistakes in the diagnosis and treatment of injuries and surgical diseases of the lower extremities is as thoroughly practical and worthy of perusal by the medical practitioner as are the medical volumes previously reviewed.

A MANUAL OF NURSING PROCEDURES. By E. Priscilla Reid, R.N.; Mabel E. Hoffman, R.N., Instructor in the General Hospital School of Nursing; Hazel L. Jennings, R.N., Instructor in the General Hospital School of Nursing, and Lillian A. Read, R.N., Instructor in the Homeopathic Hospital School of Nursing. Cloth. Price, $1.75 net. Pp. 181, with 57 illustrations. Philadelphia: W. B. Saunders Company, 1923.

This is a concise, well illustrated outline of standard methods. For each practice the purpose, equipment and procedure are listed. Where needed, notes of precaution have been added.

Medicolegal

Waiver of Privilege by Heir Also Physician

(Schornick v. Schornick (Ariz.), 220 Pac. R. 397)

The Supreme Court of Arizona says that George Schornick having in his lifetime deeded a tract of land to his wife; the plaintiff, a physician, who was the son and heir at law of the grantor, sought to have the deed set aside on the ground of mental incapacity of the grantor and undue influence exerted over the grantor by the grantee. The plaintiff had, as a physician, attended his father in his last illness, and was questioned, while a witness in his own behalf, as to his father's mental capacity at the time of the execution of the deed. This testimony, on objection, was excluded as privileged. It was particularly sought to show what narcotics were administered and that their effect was to render the patient mentally incompetent. The Arizona statute provides:

> A physician or surgeon cannot be examined, without the consent of his patient, as to any communication made by his patient with reference to any physical or supposed physical disease or any knowledge obtained by personal examination of such patient; provided, that if a person offer himself as a witness and voluntarily testify with reference to such communications, that is to be deemed a consent to the examination of such physician.

It will be noted that the patient is expressly authorized to waive the protection of the statute, but the statute is silent as to the right or power of any one else to waive such privilege for the patient, either during his lifetime or after his death. But it would seem that, if the patient might in his lifetime personally waive the claim of secrecy, he could do so by his agent or attorney. When he dies and can no longer act for himself, or appoint others to act for him, the law steps in and names those who may act in his stead, by reason of the interest they have as his heirs at law or by appointment as his personal representative. Just how far the latter may represent the deceased patient in the matter of waiving the statutory protection, or whether they may waive it at all, has been the rock on which the courts have divided. If the right to waive the privilege dies with the patient, then whatever he may have communicated to his physician, or whatever the physician may have learned by observation or examination, although its disclosure would save his estate or preserve his good name, is doomed to eternal oblivion.

Since the protection of the statute is not absolute but may be waived by the patient, it cannot be said to be a rule of evidence founded in public policy. The privilege, then, is one concerning, first, the patient in his lifetime, and, secondly, his good name and estate after his death; and if the rule be limited to waivers for the protection of his memory and estate, this court can see no good reason why it may not be exercised by the personal representative and the heirs at law—the one as well as the other. It may be taken for granted that the patient will not waive the privilege when the testimony of his physician would be damaging to his property interests or when it has a tendency to disgrace and humiliate him or expose him to public hatred and shame. Likewise, it may be assumed that the heirs at law and personal representatives would, for personal, if no other, reason be actuated by the same motives.

Under the Arizona statute of descent, both the plaintiff and the defendant in this case were heirs at law of the deceased, but they were not both before the court claiming as heirs. The defendant claimed as grantee, and her testimonial rights should be tested by the same rules as if she were not an heir but a stranger. If she could invoke the privilege and prevent the attending physician from testifying, any grantee from the ancestor could do the same. Besides, the testimony sought from the physician was not objectionable as tending to blacken the memory of the deceased or lessen his estate.

This court has come to the conclusion that the trial court erred in not permitting the plaintiff to testify as to the mental capacity of his father during his last illness and at the time of the execution of the deed in quesion. The fact that the relationship of father and son, as well as of patient and

physician, existed between the deceased and the witness did not disqualify the witness, but was or might be a proper matter for consideration in weighing the latter's testimony. Wherefore the judgment dismissing the plaintiff's complaint must be reversed and the cause remanded for a new trial, on account of the refusal of the trial court to permit the plaintiff to testify.

Burden of Proof in Action for Alleged Malpractice

(Bryant v. Anderson (Ga.), 119 S. E. R. 920)

The Court of Appeals of Georgia, Division No. 1, in affirming a judgment for damages in favor of plaintiff Anderson, says that the action was one to recover for an injury alleged to have been caused by the defendant's malpractice in improperly setting a broken arm. The burden was on the plaintiff to show a want of due care, skill or diligence on the part of the defendant, and also that the injury resulted from the want of such care, skill or diligence. What the plaintiff's proof showed is not stated; but the court holds that he carried the burden thus imposed on him, and he was not required to prove further that the injury was not due to his own negligence. When a plaintiff in an action sounding in tort (wrongful act) proves his injury, and that it was caused by the negligence of the defendant, he makes out a prima facie case, and the burden is not on him, as a part of his case, to show that by the exercise of proper diligence he could [not] have prevented the injury, or that he did not contribute thereto by any negligence on his part. This is a matter of defense. In such a case, unless the plaintiff in making out his case submits proof of his own negligence as the contributory cause of his injury, the burden is on the defendant to prove the plaintiff's negligence, if such defense is made to the action. In other words, as stated by the court in a headnote, in a suit against a surgeon for damages for a personal injury alleged to have been caused by his malpractice, where the defense is that the injury was caused by the negligence of the plaintiff, and where the plaintiff makes out a prima facie case by showing that the injury was caused by want of due care, skill or diligence on the part of the defendant, and does not, in making out his case, show any negligence on his part, the burden is on the defendant to prove that negligence of the plaintiff caused or contributed to the injury.

Settled Law for Physicians—As to Roentgenograms

(James v. Grigsby (Kan.), 220 Pac. R. 267)

The Supreme Court of Kansas, in affirming a judgment in favor of the plaintiff, says that he—a man, 58 years old, living on a farm—suffered an oblique fracture of the femur of his left leg, about 3 inches above the knee. The defendant, with the aid of two neighbors, set the broken bone, using two splints made out of boards, and hung a weight to the foot. He wanted to take the plaintiff to a hospital, but did not get his consent to go until the second day after the accident, when he was taken in an automobile 4½ miles to the hospital, over hilly roads. Roentgenograms taken more than fourteen months after the accident showed that the ends of the bone overlapped more than an inch, and that the leg was from 10 to 12 degrees out of alignment.

Certain principles of law the court deems settled by repeated adjudication: The relation between a physician or surgeon and his patient, implied in law, is that he possesses that reasonable degree of learning and skill ordinarily possessed by members of his profession and of his school of medicine in the community where he practices or similar communities, having due regard for the advance in medical or surgical science at the time, and that he will use such learning and skill in his treatment of the patient with ordinary care and diligence. In case of doubt as to which of two or more courses is to be pursued, he must use his best judgment. He does not guarantee good results, and no civil liability arises merely from bad results; nor if bad results are due to some cause other than his treatment; but where he fails to possess ordinary learning and skill, or fails to use ordinary care and diligence, and injury results therefrom, he is liable for the injury to the patient in a civil action for damages. These principles apply to diagnosis as well as to treatment thereafter.

What is the proper treatment to be used in a particular case is a medical question, to be testified to by physicians as expert witnesses; laymen, even jurors and courts, are not permitted to say what is the proper treatment for a disease or how a specific surgical operation should be handled. Results, if so pronounced as to be apparent, may be testified to by any one. And where negligence in the treatment is shown by medical witnesses, and the evidence shows a bad result, it is the province of the jury to say whether the result was caused by the negligence.

There was evidence showing that the proper practice, and hence ordinary care and diligence required, when the plaintiff was taken to the hospital where there was a roentgen-ray machine, a roengtenogram should have been taken—in fact, two roentgenograms should have been taken, one front view and one side view. The medical evidence would indicate that the roentgen ray had been used so long in diagnosing fractures or bone conditions, and for the purpose of seeing whether a fractured bone had been properly set and the ends of the bone were in apposition and proper alinement, that it should be used as a matter of course, when available, and not to use it under such circumstances is negligence. The roentgen ray was not used, though available. The evidence further tended to show that the proper practice, when roentgenograms show an oblique fracture, is to treat it by the "open wound" method of bone surgery. This was not done. All of this indicated that the defendant did not use ordinary care and diligence in diagnosing the fracture or in examining the broken leg, or in using the proper method of treatment after the plaintiff was taken to the hospital. The evidence also disclosed that there was a poor result. The evidence was sufficient to require the submission of the case to the jury.

The evidence was that it was the proper treatment to take the roentgenogram if facilities were available. Hence it was the duty of the defendant to take it without request, and under the evidence of both the plaintiff and the defendant the question of pay did not enter into it. It may be doubted whether the plaintiff would be required to pay in advance for the use of the roentgen ray, any more than he would for the use of any surgical instruments or appliances, or for bandages, but that need not be here decided.

An instruction is objectionable that requires the physician to bring to bear on the case "all his learning, skill and best judgment," for no one can always be at his best. The correct rule is that he must use in his treatment the caution, care and skill usually employed in like cases.

Use of Drugs Not "Habitual Intemperance"—Divorce

(Hayes v. Hayes (Fla.), 98 So. R. 66)

The Supreme Court of Florida says that the complainant sought a dissolution of the marriage bond existing between himself and the defendant, on the grounds of extreme cruelty and "habitual intemperance, in that she habitually and continuously indulged in the use of narcotic drugs to excess, and indulged in such habit until she became a victim thereof, and until the effect of the excessive use of such drugs rendered the defendant unable and unfit to perform the duties of a wife, and rendered the continuance of the marital relation between them intolerable and impracticable." The defendant having been committed to a hospital for the insane, a guardian ad litem was appointed to represent her. He demurred to that part of the complaint alleging habitual intemperance. The demurrer was sustained, and on final hearing the bill of complaint was dismissed. The supreme court affirms the judgment.

"Habitual intemperance of defendant" is a ground for divorce in Florida, and the effect of the demurrer was to raise the question whether or not "habitual intemperance" should be extended to cover the immoderate use of drugs; or, under the terms of the Florida statute, is the drug habit a ground for divorce? The statute making habitual intemperance a ground for divorce was enacted in 1835, when the intemperate use of alcoholic beverages was frequent, while

the drug habit was comparatively infrequent. "Habitual intemperance," as a ground for separation, means the custom or habit of getting drunk; ordinary beer drinking, short of intoxication, furnishes no ground for such a charge. Habitual drunkenness or intemperance, as a statutory ground for divorce, means an irresistible habit of getting drunk, a fixed habit of drinking to excess, such frequent indulgence to excess as to show a formed habit and inability to control the appetite.

The textbooks all make a distinction between and discuss under different heads the immoderate use of drugs and habitual intemperance, and some states with old statutes like this one of Florida have in recent years enacted laws enlarging the meaning of "habitual intemperance" or "habitual drunkenness," and such like terms, to cover the intemperate use of drugs; but such a statute has not been passed in Florida, so the court must conclude that the legislature used the term "habitual intemperance" in its plain, ordinary and usual sense, namely, the intemperate use of alcoholic beverages, and that it has no application to the drug habit. The defendant's demurrer to this part of the bill was therefore properly sustained.

It seems to be a well established rule in some states that proceedings for divorce may be instituted against an insane spouse for any ground of divorce accruing while such spouse was sane, and that the subsequent insanity of such spouse is not under modern law regarded as a bar to such proceedings. But divorce on the ground of extreme cruelty will be denied when there is no actual violence, unless the treatment complained of be such as damages health or renders cohabitation intolerable and unsafe, or unless there are threats of mistreatment of such kind as to cause reasonable and abiding apprehension of bodily violence, so as to render it impracticable to discharge marital duties.

Physicians Testifying to Statements of Patients

(Adolf v. Brown (Mo.), 255 S. W. R. 947. Rubin et al. v. L. H. Trowbridge Sign Co. (N. J.), 122 Atl. R. 763)

The St. Louis (Mo.) Court of Appeals, in affirming a judgment for damages in favor of plaintiff Adolf, who sustained personal injuries owing to the alleged negligent operation of defendant Brown's automobile, says that the defendant complained of certain testimony given by the plaintiff's physician, detailing statements made by the plaintiff to the physician while under the latter's treatment. The rule relating to such testimony, as announced and adhered to by the courts in the state of Missouri, is that a physician may give in evidence his expert opinion of the condition of his patient, founded on his observation or on the patient's statement of present subjective symptoms, or both, and in giving his opinion the physician may testify not only of what he observed but what the patient told him about present symptoms, but may not give in evidence statements of the patient with respect to his past physical condition or the circumstances surrounding the injury or the manner in which the injury was received. It was obvious that much of the physician's testimony complained of in this case violated the rule against the admission of the statements of the patient with respect to his past condition and the history of his case; but the statements of the plaintiff testified to by the physician were mere reiterations of facts, well established by other evidence and not contested or disputed, in consequence of which the admission of the physician's testimony was harmless.

The Court of Errors and Appeals of New Jersey, in affirming a judgment for damages in favor of the plaintiffs in the Rubin personal injury case, says that a physician was called by the plaintiffs to give expert testimony, and gave testimony as to what the injured person told him about having a headache and dizzy spells. But the physician not being the plaintiff's attending physician, such testimony was inadmissible. However, it was apparent from the question which was put that the objectionable part of the physician's answer was not responsive, but was volunteered. In such a situation the adverse party was entitled to move that the objectionable part of the answer be stricken out, which course was not pursued, and therefore there was no ruling on the subject for this court to review.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Chicago, June 9-13. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association of Genito-Urinary Surgeons, Stockbridge, Mass., May 26-28. Dr. Henry G. Bugbee, 40 East 41st St., New York, Sec'y.
American Dermatological Association, Minneapolis, Minn., June 5-7. Dr. Udo J. Wile, 211 East Huron Street, Ann Arbor, Mich., Secretary.
American Laryngological Association, Swampscott, Mass., June 2-4. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Laryngological, Rhinological and Otological Society, St. Louis, May 29-31. Dr. W. H. Haskin, 40 East 41st Street, New York, Sec'y.
American Neurological Association, Philadelphia, June 5-7. Dr. Frederick Tilney, 870 Madison Avenue, New York, Secretary.
American Ophthalmological Society, Hot Springs, Virginia, May 26-28. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
American Otological Society, Swampscott, Mass., June 3-5. Dr. Thomas J. Harris, 104 E. 40th Street, New York, Secretary.
American Pediatric Society, Pittsfield, Mass., June 5-7. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
American Proctologic Society, New York, June 23-25. Dr. Joseph F. Montague, 540 Park Avenue, New York, Secretary.
American Psychiatric Association, Atlantic City, June 3-6. Dr. C. Floyd Haviland, Drawer 18, Capitol Station, Albany, N. Y., Secretary.
American Radium Society, Chicago, June 9-10. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
American Society of Clinical Pathologists, Rochester, Minn., June 5-7. Dr. Ward Burdick, 652 Metropolitan Building, Denver, Secretary.
American Society of Tropical Medicine, Chicago, June 9-10. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Secretary.
American Urological Association, Atlantic City, June 3-5. Dr. Homer G. Hamer, 723 Hume-Mansur Building, Indianapolis, Secretary.
Arkansas Medical Society, Fayetteville, May 20-22. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
Associated Anesthetists of the United States and Canada, Chicago, June 9-10. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
Connecticut State Medical Society, Hartford, May 28-29. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Maine Medical Association, Portland, June 25-27. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Boston, June 6-7. Dr. W. L. Burrage, 182 Walnut St., Brookline, Secretary.
Medical Library Association, Chicago, June 9-10. Dr. John Ruhräh, 11 East Chase St., Baltimore, Secretary.
Medical Women's National Association, Chicago, June 9-10. Dr. J. W. Fisher, Middlesex Hospital, Middlesex, Conn., Secretary.
New Hampshire Medical Society, Manchester, June 24-25. Dr. D. E. Sullivan, 7 N. State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 5-7. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.
New Mexico Medical Society, Santa Fe, May 27-29. Dr. Charles M. Yater, Roswell, Secretary.
Pacific Northwest Medical Association, Vancouver, B. C., June 26-28. Dr. F. Epplen, 422 Paulsen Building, Spokane, Wash., Secretary.
Radiological Society of North America, Chicago, June 6-7. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Rhode Island Medical Society, Providence, June 5. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.
Southern Minnesota Medical Association, Mankato, May 19. Dr. H. T. McGuigan, Redwing, Secretary.
Utah State Medical Association, Logan, June 19-21. Dr. William L. Rich, Boston Building, Salt Lake City, Secretary.
Wyoming State Medical Society, Cody, June 17-19. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Eighteenth Annual Meeting, held at Rochester, April 22-23, 1924

(Concluded from page 1569)

Bone Repair After Fracture

DR. FREDERIC W. BANCROFT, New York: In the treatment of fractures, in addition to the purely mechanical replacement of fragments we must attempt to influence body metabolism and to aid the repair of the soft tissues injured at the time of fracture. Attention should be paid to the general hygiene of the patient. Sunlight and diet are big factors in influencing the calcium and phosphate content of the blood. In certain cases of delayed union, yellow phosphate, cod liver oil and calcium lactate apparently have aided osteogenesis. Early active motion and massage by stimulating the blood supply aid in the production of callus. Late adhesions of muscle, fibrosis of muscle, and adhesions in joints following fractures are avoided.

Incidence of Infection in Tonsillectomized Children

DR. ALBERT D. KAISER, Rochester: One common cause given for removal of tonsils is the cure or prevention of

infection. More and more tonsillectomies are done each year; therefore, infection should be lessened each year. Is this a fact? We examined 1,200 children who were operated on and compared the findings with those of 1,200 children for whom operation had been recommended but was not done. An analysis of the data obtained shows that in tonsillitis and head colds tonsillectomy is a very decided protection; that in enlarged cervical glands operation only slightly affects the incidence as slightly lessening it; tonsillitis may be considered responsible for a certain percentage of glandular infection. Pulmonary conditions do not seem to be affected one way or the other by tonsillectomy. Scarlet fever incidence was the same in the two groups. Measles occurred more frequently in the operative than in the nonoperative cases. Tonsillectomy does not confer immunity against diphtheria, though it may lessen the amount of tissue liable to invasion. There is no decrease in the rheumatic syndrome or in cardiac disease as seen in tonsillectomized children compared with types in which operation is not performed.

Acute Rheumatic Fever

DR. HOMER F. SWIFT, New York: How does rheumatic fever cause death? (1) By hyperpyrexia; (2) by severe general intoxication; (3) by acute heart failure. The lowered death rate from rheumatic fever and polyarthritis may be due to increase of preventive measures and better treatment during the acute stages, thereby changing the listing of death from acute rheumatic fever to that of heart disease. In New York State, from 1900 to 1920, the death rate from rheumatism had fallen, but in the last two years all these curves have risen. These rises are due to influenzal infection. Up to 50 years of age, endocarditis and pericarditis deaths have not increased in twenty years, but in age periods above 50, disease plus degeneration has made a great increase in heart disease. There are three causes for failure in treatment: (1) the unknown etiologic factor; (2) lack of comprehension of the disease, and (3) lack of facilities for proper study and treatment of rheumatic fever. The pathology of rheumatic fever falls under two heads: 1. The exudative manifestations—edema, redness, pain, tenderness. These respond to drugs. 2. Proliferative manifestations comparable to infectious granulomas, the Aschoff bodies, subcutaneous nodules and focal lesions in the joints and in the aorta. Some years before the use of salicylates, Friedländer defined the types of rheumatic fever as: (1) the monocyclic type; (2) the polycyclic type, and (3) the continuous form. He found that 30 per cent. of cases were classified as polycyclic. At present the difference in type is hidden by the use of masking drugs, but if these are withdrawn, the classification is found to be correct. Drugs used in treatment are sodium salicylate and neocinchophen. These mask the symptoms, and relapse occurs in the polycyclic type immediately they are withdrawn. Even with the use of the drugs, the temperature and leukocyte curves remain up and the nodules persist. The cycles recur about every twenty days, and are more marked by pulse rate than by temperature curve. The pulse rate persists in spite of drugs. There are three types of leukocyte counts in this disease, according as the predominating factor is: (1) cardiac nodules; (2) polyarthritis; (3) monocycles. As tonsillitis is the predominant symptom as a precursor of rheumatic fever, tonsillectomy is often indicated. Improvement seems, in some cases, to date from this procedure. As a preparation for tonsillectomy, patients should be well under the influence of antirheumatic drugs which lessens the discomfort and flare up of rheumatic symptoms. There may be multiple foci of infection in the body, and with depression of the patient the other foci may get a chance to light up. The most important single factor is the length of time necessary to keep patients quiet. This must be as long as signs of infection persist. Care in the homes of convalescents must supplement hospital care.

DISCUSSION

DR. ROBERT H. HALSEY, New York: If the tonsil is the portal of entry of infection to the organism, the removal of the tonsil is like shutting a gate after infection has entered. It does not destroy the active infection in other parts of the body. Consequently, the arthritis and heart infection are still going on although the tonsil is removed. In the question of glandular involvement, especially of the cervical glands, one must keep in mind the condition of the teeth at the time of examination and subsequently. The teeth are the real cause of inflammation of the cervical glands. The same thing is true of the heart. In New York, 75 per cent. of the school children who have organic heart disease give a history of repeated attacks of tonsillitis. Rheumatism in various forms occurs in slightly more than 50 per cent. Tonsillitis is of much more frequent occurrence than rheumatism. The important point in cases of rheumatic infection is to follow the case until we can be certain that there is no further active infection present.

DR. S. BAYNE JONES, Rochester: A study involving the time of many physicians should be made in collaboration with statisticians. We need a definite statement as to what infection had occurred in the children who have not been operated on during the same period of time as in the children who have been operated on. The dissimilarity is very striking, between sixty-four and 677 in the subsequent tonsillitis cases. I think that if time periods were studied more carefully some operative results might not seem so good, and some might seem better. In regard to diphtheria, we should know how many children were susceptible, as shown by the Schick test, and how many were not, and how many were immunized with toxin-antitoxin, and how many susceptibles existed in the scarlet fever group. Two points should be emphasized: Dr. Kaiser has said nothing against removal of diseased tonsils, but there is great doubt whether general prophylactic removal of tonsils is a good thing. The statistics in regard to rheumatic infection are useful. It looks as if the tonsils were not the only portal of entry.

DR. DELANCEY ROCHESTER, Buffalo: I have seen a subacute nephritis develop as the result of appendicitis, and after operative removal of the appendix the nephritis cleared up. More recently I have had two cases of rheumatism in which I found a moderate leukocytosis with a decided increase in the proportion of transitionals, 10 per cent. in one case, 7 per cent. in the other. I found distinct tenderness down in the right iliac region. I advised operation. Since operation, neither patient has been troubled with rheumatism in one and three years, respectively.

DR. LOUIS WARFIELD, Ann Arbor, Mich: A very simple treatment which I have found efficacious, and which has seemed to shorten the period of disability and discomfort in acute rheumatic fever, is splinting each joint as it becomes involved, even if every joint of the body is affected. I am sure that the number of days of disease was shortened and the patient improved. At the same time I gave large doses of salicylate. Large doses yield better results than small doses; they should be given for a short period, with intervals.

Results Obtained with the Dick Test and Schultz-Charlton Test in Scarlet Fever

DR. ABRAHAM ZINGHER, New York: I am convinced that the Dick test will be the means to stamp out scarlet fever. In the laboratories in New York, we have been able to produce an antitoxin, 10 c.c. of which will neutralize fifty thousand times the skin dose. This antitoxin will keep better than diphtheria antitoxin, which is a great advantage in commercial preparations. As yet we have not found a method for standardizing the antitoxin through animals. The Dick test is positive in the early stages of scarlet fever, and negative in the later stages because of formation of antibodies. The same toxin is used for the skin test as is used in active immunization. Within a year we shall be able to rewrite the history of the epidemiology of scarlet fever.

Treatment of Lobar Pneumonia with Pneumococcus Antibody Solution

DR. RUSSELL L. CECIL, New York: Pneumococcus antibody solution was extracted from serum taken from a horse immunized against the pneumococcus. The substance was suspended in water. The advantage of this aqueous solution is that it is free from foreign protein, and there is no danger

of anaphylaxis or of serum sickness. The solution made is polyvalent, containing antibodies against Types I, II and III. The theoretical advantage of this is that the sputum does not have to be typed. The solution is faintly alkaline and looks like distilled water. It was at first administered intravenously, in doses of from 50 to 100 c.c., and the injections were continued until the temperature fell to normal. The antibody solution gave rise to characteristic reactions. In most cases the injection was followed in from one-half to one hour by a definite chill and a rise in temperature of from 1 to 3 degrees, then, later, by a rapid fall in temperature with profuse perspiration. These reactions were striking and rather alarming. Often the patient became delirious, and we had to resort to ice-packs to lower the temperature. Examining the differences in the death rate in the cases treated by antibody solution with the untreated cases, we find that the most striking difference was in Type I cases, in which the treated cases showed a death rate of 13.4 per cent. and the untreated cases, a rate of 23.4 per cent. In Type IV, the percentages were 15.6 in the treated, and 22.8 in the untreated cases. The differences between Types II and III were not striking. The results in Type IV cases were rather puzzling, as no antibody was prepared for this group, but this may be explained by considering the bacteria of Type IV as being atypical forms of the more fixed types. Another point is the time at which treatment was instituted. If the antibody solution was administered during the first forty-eight hours of the disease, the death rate was much lowered, especialy in Type I cases: the treated cases showing a death rate of 8.9 per cent. against 23.5 per cent. in the untreated cases.

DISCUSSION

DR. A. R. DOCHEZ, New York: This paper reflects in an interesting way the improvement in specific therapy in lobar pneumonia. At first a polyvalent serum was used without regard to type or adaptation of the serum. Then an effort was made to type the serum and make the type suit the patient. It was hoped that with specific adaptation great improvement would occur, but this did not turn out as we had hoped. After some experience we found that Type I was the only one we could be sure of. One reason for this was the large amount of serum that had to be given, as much as 100 c.c. horse serum, and sometimes the dose had to be repeated. This necessarily introduced a large amount of foreign protein into the circulation. The results in Type I justified the experiment, but not so in the other types. Dr. Huntoon worked on methods of concentrating the antibody and extracting it from the solution, leaving out the horse protein. With this he made a concentrated aqueous solution. This can be extended to a larger series of cases without danger of anaphylaxis or serum sickness. The therapy can be used in other types of pneumococcus infection and it now appears that in Type II, where a specific antibody can be obtained there is some, but not marked, reduction in the mortality. Another improvement is a diminution of the toxic reaction due to bacterial poison injected. We now get a product with very little of the bacterial substance. In some instances, this has produced very dangerous reactions. An interesting point is the response of Type IV cases of pneumonia, for which no antibodies have been prepared in the serum. There is a scientific explanation for this. It was at first supposed that a serum could not be used against Type IV because of lack of serologic specificity. Avery and Morgan have recently shown that the specificity of the pneumococci is divisible, and that the specific qualities lie in the capsule of the pneumococcus. When the capsule is washed off there is a basic nucleoprotein which has common characteristics in all types of pneumococci. The longer the animal is immunized the more it reacts to this common nucleoprotein. Old serum, therefore, has a much wider range of use than new serum. One point should be borne in mind with all methods that aim at concentration of specific immune serums: there is a specific antitoxic quality in the serum and this is an important factor in the mental condition of the patient. In the newer methods of concentration it is hoped to leave behind any possible antitoxin component so that the antitoxic character of the serum may be increased.

DR. GEORGE ROBEY, Rochester: We have been interested in Rochester in Type I pneumonia. Our results have been favorable. In many cases, thirty hours after the original chill the course has run steadily normal. I do not think the results from the subcutaneous method are encouraging. They were more encouraging in the Type IV cases, where they should not have been. During the winter and spring there was not a single death, except one death in March, in a case of Type I pneumonia. Recently we have been trying to change the classification of pneumonia. The deaths have not been reported as being due to lobar or to bronchopneumonia, but to untyped, or streptococcus or staphylococcus pneumonia. I think that this will encourage physicians to type the pneumonias early. In all we have had twenty-five deaths from untyped pneumonia.

Acute Leukemia and Mononucleosis

DR. NELSON G. RUSSELL, Buffalo: Leukemias may be of three types: (1) acute myelogenous; (2) acute lymphatic, and (3) infectious mononucleosis. In regard to symptomatology, the first type (myelogenous) exhibits fever; malaise; elevation of temperature; recurrent chills; enlargement of the spleen; striking anemia; hemorrhage; necrosis of the gums; increase in leukocytes, and decrease in red cells, the differential count showing mononuclear cells and sometimes myelocytes. The second type (lymphatic) is characterized by chills; severe prostration; anemia; sore throat; difficulty in swallowing; Vincent's angina organisms in the throat; hemorrhages in some form; enlarged glands; enlarged spleen and liver, and a coincidental drop in the red cells and the hemoglobin. The polymorphonuclears are increased; the lymphocytes form about 98 per cent., but there is no great relative increase of the large cells. The third type (mononucleosis) has a gradual onset, with malaise, headache, irregular fever and chills. There is pharyngitis, tonsillitis, tracheitis and cough. The lymphoid tissue of the pharynx becomes swollen. The patients complain of sweating. Often there is abdominal pain with nausea and vomiting. Sometimes there are enlarged cervical lymph nodes during the first week of the disease, and sometimes axillary and inguinal nodules. The epitrochlear and bronchial lymph nodes become swollen. The spleen is enlarged, palpable and tender. By the seventh day, the mononucleosis is well marked. The leukocytes increase in number. There is an irregular mild fever, which continues for about twenty days and subsides. After this, convalescence is rapid and uneventful. The leukemias suggest a severe prostrating infection, while mononucleosis shows the same symptoms without the prostration and hemorrhages. The differential diagnosis can be made by staining the bone marrow cells by the oxydase staining method. The diagnosis may often be confused by the clinical picture in typhoid fever, septicemia or acute endocarditis. While the blood picture may not always be definite there are always abnormal leukocytes present. The treatment is preparations of arsenic to destroy the organism of Vincent's angina.

Relationship of Streptococcus Hemolyticus to Scarlet Fever

DR. ALPHONSE R. DOCHEZ, New York: During the war there was very much streptococcus infection and much investigation was done. A technic was formed for testing agglutination reactions for *Streptococcus hemolyticus*, and it was found that one type of hemolytic streptococcus could be differentiated from another. Then the relationship of streptococci to scarlet fever was investigated to see if individual strains obtained from scarlet fever patients were related to each other. Strains of streptococci from a large number of sore throats in scarlet fever bore close immunologic relationship to one another, and the immune serum reacted in about 80 per cent. of cases. The different strains can be differentiated. It appears that there is a more or less specific group of streptococci associated with scarlet fever, which do not appear in other streptococcus infection. We found a specific streptococcus in cases of scarlet fever arising from infected milk. The epidemic was traced to a single healthy carrier. Attempts were made to produce experimentally in animals a typical scarlet fever. The first

results were negative, but in one dog we were successful, because, as we found later, the injection was given at a point where the lymphatics were blocked. We finally succeeded in producing the symptoms in guinea-pigs by a local, subcutaneous injection. We believe that the general symptoms and rash are toxic in character, but we have not been able to demonstrate in small amounts an in vitro toxin that will kill animals. It seems, therefore, that the circle is complete: first, the streptococcus is present; second, it is a specific streptococcus; third, the lesion can be produced in guinea-pigs; fourth, it can be differentiated immunologically from other types of streptococci, and fifth, an animal immunized against this organism produces a serum which can cause a local disappearance of the rash, as does the convalescent serum of the patient.

Origin of Pain in the Serous Membranes and Its Value in Diagnosis

DR. JOSEPH A. CAPPS, Chicago: Of all symptoms the most important is pain. We are continually baffled in the proper interpretation of pain. In the endeavor to clear up some of these points, we have carried on experimental clinical work, making a particular study of the pleural and peritoneal membranes. Pressure along the margins of the diaphragm would produce pain in the hypochondrium. Pressure in the hypochondrium, however, is not felt as pain there, but produces pain in the trapezius region of the neck. If the pressure in the thorax is increased, the area of hypochondrial pain is extended and goes lower. When the posterior part of the diaphragm is explored there is pain in the lumbar region and the hypochondrium. In diaphragmatic pleurisy, the pain is referred to the upper third of the trapezius ridge. Central pressure on the diaphragm brings the pain lower down on the trapezius ridge; with continued pressure there is bilateral response in the belly of the muscle. When a silver wire is used to irritate the lower part of the pericardium, the pain is evident in the central part of the diaphragm and the middle of the trapezius. The diaphragm receives a supply from the lower 6 thoracic nerves, from below the sternum to the symphysis pubis. The diaphragm has lost the power of pain localization for itself, but the intercostal nerves are capable of taking up the impulses and transmitting them to the spinal cord, and these pass to the last six cord roots to the spine itself. Therefore there is pain in the abdominal wall, and this is felt occasionally down to the symphysis pubis. The phrenic nerves supply the muscles of the diaphragm and the latter receives afferent nerves which correspond to sensory nerves, which act to carry the impulses to the neck. The phrenic nerve rises at the third to fifth cervical and nearly all referred pain goes up into the fourth cutaneous segment, where the sensory distribution corresponds to the trapezius muscle ridge. Irritation of the peritoneum, except near the pelvis, causes pain in the neck. Below the diaphragm, the pain leaves the neck and is recognized in the hypochondrium. In regard to pain in the abdomen: can this be shown in different conditions, and can pain in the neck arise from other lesions than those causing pressure on the central diaphragm? Some workers have thought so, but our observations are not in accord with this idea.

DISCUSSION

DR. D. A. HALLER, Rochester: Pain is the most important symptom. I have had two peculiar experiences recently. A man, aged 50, complained of pain in the upper abdomen. A diagnosis of acute pancreatitis was made by the surgeons. The medical staff thought he had gastric ulcer. He was operated on and died on the table. At the necropsy it was found that he had a coronary infarct, and that death was caused by a ruptured heart. Two months later an exactly similar case happened, with the same treatment and the same result.

How Can We Best Treat Pernicious Anemia?

DR. LOUIS M. WARFIELD, Ann Arbor, Mich.: I believe we are justified in giving transfusions and in operating on the patient with pernicious anemia. I believe, however, that transfusions may hasten a remission and also hasten the end of the remission. It is advisable to give liquor potasii arsenitis (Fowler's solution) by mouth. Splenectomy seems to have some justification. Patients often survive for five or six years. It prolongs life in 20 per cent. of the cases. It must be regarded as a method of relief in some cases. I think that when there is increased hemolysis splenectomy is logical. Iron is of little use and, perhaps, may do harm. Dilute hydrochloric acid can be sipped during a meal. The taste can easily be disguised. It should not be stopped during remissions.

DISCUSSION

DR. W. D. ALSEVER, Syracuse: We do not know that arsenic does good. I think it may help. Arsenic by mouth is the best method of administration. We are not justified in putting patients to the trouble and expense of intravenous medication. Transfusions are disappointing. They are very often followed by a turn for the worse. Splenectomy stands ahead of transfusion, but neither should be routine curative measures.

Acute Perforative Diverticulitis of the Sigmoid

DR. ALLAN A. JONES, Buffalo: Differential points in diagnosis are: (1) the age of the patient, appendicitis being more common in the young, diverticulitis in elderly persons; (2) the fact that diverticulitis is apt to occur in the obese; (3) the location and distribution of the pain, that of appendicitis being in the right lower quadrant, and diverticulitis in the left lower quadrant, or suprapubic (the pain is more diffuse and seeks a lower level); (4) abdominal rigidity, marked in appendicitis on the right side but not in sigmoiditis perforation, which may call for left abdominal rigidity; (5) appendicitis, forming an abscess on the right, in diverticulitis the tumor being lower down behind the bladder or the uterus. The tumor may be sausage shaped.

DISCUSSION

DR. J. A. LICHTY, Clifton Springs: This is a very important subject. An interesting question is the etiology. What causes this condition? Why do diverticula occur late in life? I do not believe this can be answered. In diverticula of the esophagus, I believe it is because the organ has been standing pressure for many years, the mucous membrane becomes stretched and pouching results. Hale White found that elderly people under institutional care in England were allowed to stay in bed a great deal and became constipated in habit. This resulted in pouching in the sigmoid. I believe constipation may tend to produce diverticula from pressure. In diagnosing acute abdominal conditions the roentgen ray is very helpful.

Some Neglected Phases of Coma in Diabetes

DR. WILLIAM S. MCCANN, Baltimore: Coma is often associated with acidosis, but it is not always due to acidosis. It may occur from some causes which operate in nondiabetic individuals. Cerebrovascular disturbance and uremic coma may occur in diabetes. Hypoglycemic coma may occur after the administration of insulin. Uremia is difficult to analyze; it is usually associated with acidosis. In diabetic coma due to ketosis there is disturbed renal function. There are two forms peculiar to the disease: (1) ketone acidosis, and (2) spontaneous hypoglycemia. The latter may be induced by insulin. These should be recognized while there is still time to administer glucose. In acidosis, the patient is able to excrete less ammonia than normal individuals. The failure to form ammonia is the basis of renal acidosis. Hyperpnea makes up for increased acid production and maintains the alkaline reserve which the kidneys normally maintain. In diabetic ketosis, the kidneys are affected by the abnormal body acids and the acids remain in contact with the blood. To preserve the balance, the kidney must excrete acid and base. By excreting acid phosphate, some base is spared to the blood. When the kidney fails to furnish ammonia as base, the alkali reserve is depleted. Therefore, renal function is most important in these cases. Fatal cases show a nephritis at necropsy. In diabetic coma dehydration is marked, and the eyeballs become shriveled like a dried grape. The blood pressure and ocular tone return when fluids are given. The oliguria and dehydration affect the kidneys, and cause acid retention so that nephritis is set up.

Diagnosis of Bone Tumors

DR. JAMES H. HITZROT, New York: The diagnosis of bone tumors is as yet in the realm of the probabilities. No satisfactory nomenclature or classification of bone tumors exists. The last classification from the registry for bone tumors is unsatisfactory because it follows no definite plan. The loose use of

the term "sarcoma" should be abandoned, and the term applied only to those tumors which are malignant. The essentials for a diagnosis are: (1) careful, complete clinical history and physical examination; (2) roentgen-ray examination; (3) pathologic diagnosis; (4) therapeutic test by radiation; (5) test of time. The correct diagnosis of the conditions classified under the tumors of bone is a difficult, if not an impossible one, at the present stage of our knowledge.

DISCUSSION

DR. JOSEPH COLT BLOODGOOD, Baltimore: Any mutilating operation, such as amputation, or any mutilating resection, is not justifiable until every effort has been made to prove that the tumor is malignant. Dr. Hitzrot has well described a method of diagnosis. He says we are not doing the patient any harm by delay. What can we do while we are observing the case, which does no harm, and sometimes does a great deal of good? We can give that patient deep roentgen-ray irradiation, or we can use radium. I cannot see that there is any great difference in using one or the other. We can also give arsphenamin. With negative Wassermann tests, results have been obtained with arsphenamin. It does no harm to any tumor to burn it out with a cautery. It is the best thing for a giant cell tumor; therefore, a histologist or pathologist is not needed to make a differential diagnosis. In the treatment of sarcoma at the present time, it would appear that roentgen ray and radium offer almost as much as amputation. If we do not get results quickly with the roentgen ray, we can resort to amputation.

Tumors of the Jaw

DR. JOSEPH COLT BLOODGOOD, Baltimore: In the old days, the treatment of cancer of the jaw was by resection. Now it is possible to burn out the cavity with a cautery. It is a good thing to have a method of operation that is not mutilating, and which is just as effective in malignant as in benign growths. The importance of sodium perborate as a mouth antiseptic is emphasized. In mouth operations, local anesthesia is one of the most important things; general anesthesia is not necessary. When the area of bone rarefaction passes the size of a five cent piece, the growth should be removed with a cautery.

DISCUSSION

DR. JAMES M. HITZROT, New York: Dr. Bloodgood has pointed out clearly that it requires very careful investigation of these conditions of the jaw, by every method which we have, for the recognition of the condition. I agree with him that the removal of these tumors by the old elaborate operations did not cure the conditions. I quite agree with what he said about removing the growth by cautery. In using the cautery in the mouth, however, one must be careful to protect the surrounding mucous membrane. A lookout should be kept for the epithelioma that grows along the side of the gum. A dentist often pulls a tooth, and later the patient comes to the physician with an epithelioma of the root socket. Dr. Bloodgood's point is extremely well taken that when a patient comes with diseased looking roots if the socket does not heal properly the tooth should be put in formaldehyd and an investigation made. This may save the patient a very unfortunate outcome.

Destruction and Removal Versus Removal and Destruction in Accessible Neoplastic Diseases

DR. GEORGE A. WYETH, New York: Endothermy is the localized production of heat in the tissues from within in response to the many oscillations of a high frequency current, differing from all other forms of cauterization in that, first, the heat comes from within, and, second, the applicator is always cold when applied. Properly performed, there should be practically no hemorrhage, and if a bleeding point is encountered, a touch with the sharp-pointed applicator generally controls it. Secondary hemorrhages rarely occur, but it is wise to ligate large blood vessels if working in their vicinity. In a high degree, the effectiveness of endothermy is due to the fact that before a malignant area is touched it is isolated from the healthy tissues by a ring of destruction necrosis; thus the malignancy is destroyed and excised as a necrotic mass, instead of as a group of viable cells. An advantage of endothermy over physical agents in the treatment of accessible malignancy is that its results are definite; it destroys, and its work is as effective against the most malignant forms of cancer as against the simplest basal cell epithelioma, provided metastasis has not already taken place.

DISCUSSION

DR. HOWARD A. KELLY, Baltimore: I am using this method very satisfactorily; I cannot state its ultimate results yet, but I think they will be as good as those by any other means. Endothermy replaces surgery and becomes a competitor with radium. Monopolar endothermy is a surgical procedure. Dr. Wyeth's plan, which I call circumvallation, is important to prevent distribution and cut off the circulation. There is no manipulation of the tissues in situ. The operator must decide just which zone is likely to be affected, and he must cover that entire area. Around that focus of malignancy there is an area of extension which may be called the penumbra. Endothermy takes care of this, and in using it one can safely do an erosion of the outer area without fear of disfigurement. Promptly repeated applications with endothermy do no harm, and this is often not true of radium. The suppuration following this is less protracted. Much of the work can be done under local anesthesia. If the first field covered is not wide enough, a supplementary operation is an efficient way of completing the work. The scalpel risks all in one effort, and rarely succeeds in a recurrent malignancy.

DR. BERNARD F. SCHREINER, Buffalo: I have found endothermy particularly useful in cases of epithelioma which involved cartilage, such as around the nose, eyelids and ears; also in epithelioma of the clitoris and vulva.

DR. WYNN B. PALMER, Rochester: While we have been using endothermy with excellent results, we follow each case by unfiltered radiation over a wider area.

The Varicose Disease

DR. ROBERT F. BARBER, Brooklyn: My work suggests that a new point of view must be taken on the nature of the varicose lesion. Varicose veins are the pressure results on the least protected veins of the leg. The blood flows in these veins in the same direction as always, i. e., toward the heart. The real pressure in the veins that does the damage is the result of vis a tergo, which is of necessity a greater pressure than any hydrostatic pressure could be. The teaching of the vicious circle is a figment of the imagination and does not exist. Trophic changes in the legs are part of the penalty of man's upright position. The changes in the deep structures of the legs are probably all due to infection.

DISCUSSION

DR. FUAD I. SHATARA, Brooklyn: The internal saphenous vein, which is most frequently varicosed, is an evolutionary defect. Since man assumed the upright posture, the weight of the column of blood between the auricle and the thigh was superimposed on the long unsupported column of blood in the lower extremity, constantly subjected to the action of gravity. With this structural defect as a predisposing cause, various and often trivial exciting causes may start the disease. The circulation in varicose veins is similar to that in normal veins, as the vis a tergo, except when the heart is decompensated, is sufficient to overcome the obstacles in the way of the venous current. There is no reversed circulation in these veins. Venous pressure, like arterial pressure, is greatly variable, gravity playing an important part; there is, however, always a pressure gradient, maintained with maximum pressure in the aorta and minimum pressure in the afferent vessels that empty into the right auricle. Venous valves have only one function, that is, to occlude the lumen when pressure is exerted on the vein wall during muscular contraction, thus preventing backward regurgitation. In varicose veins, the valves are insufficient, and during muscular contraction, the blood is forced not only onward, but also backward. This backward regurgitation explains some of the pathologic changes in varicose veins. On the other hand, this valvular insufficiency is only a link in the chain, and does not explain the whole pathologic picture. Sections removed from varicose veins have sometimes shown perfectly normal valves, but a phlebosclerotic vein wall. A rôle which they do not play has been assigned to the valves in the perforating veins. The filling time test is based on this alleged rôle. The operability of a given case is supposed to be determined by this test. These valves have been found to open both ways, and in several perforating veins, in persons with normal veins, these valves are absent.

DR. JOHN E. JENNINGS, Brooklyn: So long ago as 1839, Gay of London, showed a number of plates, which were almost as excellent as we possess today, of sections of varices of the deeper veins, and, in 1913, Davé of Paris, who wrote a most elaborate monograph on varicose veins, included a number of plates showing varices of the deeper veins. He also did manometric readings as Dr. Barber has done, and added the results of manometric pressure in varicose veins under strain. If, as Dr. Barber infers, the cause of varicose veins is not essentially pressure from above, but a disease of the vein wall, dependent on infection, then why should our most common cases of varicose veins be in pregnancy? Why should we find, as we often do in operating on varicose veins of the leg, that if the saphenous vein is opened not only pressure around the proximal end of the vein is found but also a pulsating pressure apparently synchronous with respiration, but with the beat of the heart?

DR. ROBERT F. BARBER, Brooklyn: In regard to the varicosities of the deep veins, I believe I am justified in concluding from my experience that there is a strong probability that there is no such thing in the average case as varicosity of the deep vein. As regards the results of operative treatment, our experience has been at variance with the figures found in the literature. In a series of about 100 cases I know of only three or four recurrences, but I want to know the results at the end of five and ten years, because I feel that this condition is something beyond the vein. It is a real varicose disease which implies a trophic disturbance due to something else much more complicated than the mere effect on the veins themselves.

Prostate and Renal Surgery Under Regional Anesthesia

DR. OSWALD S. LOWSLEY, New York: Major operative procedures on the kidney and prostate under regional anesthesia are being done successfully. There is much less bleeding by this method than by any inhalation anesthesia. The patient ordinarily suffers no pain for seven or eight hours after operation, hence avoiding this dangerous element in the production of postoperative shock. The development of new and less toxic anesthetic agencies and methods of administering them bids fair to mark the next great progress in urologic surgery.

The Gram-Positive Anaerobes in Appendicitis and Its Complications

DR. JOHN E. JENNINGS, Brooklyn: Gangrenous appendicitis is considered an infection by the gas gangrene producing organism superimposed on the so-called catarrhal or suppurative appendicitis due to streptococci or other invasion. *Bacillus welchii* was found almost constantly in the gangrenous abscess, and except in massive collections it has, as a rule, seemed a quite harmless contamination. *B. welchii* has been found present in large numbers in fatal cases associated with toxic symptoms not unlike those associated with fatal gas gangrene of the extremities. It has been present in the peritoneal fluid with symptoms of intoxication, and relief of the toxic symptoms has been obtained on administration of the antitoxin available. It has been present in the peritoneal fluid, and remission of the toxic symptoms following the use of antitoxin has been noted, but it was impossible to control the peritonitis with the classical fatal issue. Its presence has also been noted and the patient given antitoxin, which proved quite useless, the intoxication apparently being due to another toxin.

DISCUSSION

DR. ROYALE H. FOWLER, Brooklyn: Just what determines the presence of anaerobes in cases of appendicitis and subsequent trouble, I do not know. We frequently find anaerobes present in cases that cause no trouble as well as in cases that cause a great deal of trouble.

DR. LOUIS NEER, Brooklyn: In cases of gangrenous appendices, a very important factor is the identification of the different aerobic and anaerobic bacteria. After careful investigation the conclusion was reached that most important among these is *Bacillus welchii* or *Bacillus aerogenes-capsulatus*, commonly known as the gas bacillus. The great handicap in such cases was found to be the long process needed to bring about the identification of this anaerobe. We have devised a method which shortens the time for making such identification very much.

DR. CALVIN B. COULTER, Brooklyn: I have attempted to determine what histologic evidence there might be for the rôle played by the gram-positive anaerobes, and have been particularly interested in appendices showing no gross perforation or gangrene, but showing the usual exudation on the surface. My ideas of the mechanism of infection have been altered by these studies. It was shown by the studies at Mount Sinai, from ten to twelve years ago, that the spread of the inflammation to the outer serous coat of the appendix takes place very promptly. In studying sections from certain patients, we found that the spread of the infection is very definitely along the lymphatic system. It is not true that the mucosa is inflamed and destroyed first; rather the infection gets into the mucosa and into the lymphoid tissue along the lymphoid sinuses, and from there, not being blocked by a preceding inflammatory reaction, which, as Opie says, causes an effective barrier, the bacteria are carried with the lymphatic stream around the lymphoid tissue of the mucosa and submucosa into the perivascular lymphatics in the muscular and subserous parts of the wall, and at a time when the actual destruction of the mucosa is very small in amount. We have found not only streptococci, but anaerobic organisms corresponding in their morphology to the group of gram-positive anaerobes in these lymphatics. Our ideas of the actual mechanism of destruction of the appendix have been altered somewhat. We find these bacteria always associated with some inflammatory cellular accumulation. The blood vessels themselves may not even be thrombosed at this time. The closing off of the blood vessels, the occurrence of hemorrhage, and the occurrence of massive gangrene is a secondary phenomenon to this lodgment of bacteria in the perivascular lymphatics. This finding of these anaerobic types of bacteria in parts of the appendix that are not gangrenous and that are yet hardly inflamed enough to make a diagnosis on them indicates that there is a possibility of their local multiplication and a local evolution of toxin. It may be that there are elaborated locally within these living tissues toxins that are responsible for the major part of the cases of appendicitis.

Operation in Difficult Hernias

DRS. MARTIN B. TINKER and H. B. SUTTON, Ithaca: The Bassini operation with its modifications, such as transplanting the rectus muscle or sheath, gives a percentage of recurrence far too high, particularly in direct hernias, recurrent hernias, and oblique hernias in old people. In these cases this procedure should be abandoned. In cases in which the fascial structures at the hernial site are good, the procedure of Andrews or some overlapping method may give better results, but McArthur's autoplastic sutures laced across the posterior wall of the lower half of the inguinal canal seem best. In bad direct hernias, old oblique hernias, all recurrent hernias and ventral hernias, Gallie's procedure gives the most promise. The routine use of local anesthesia, by eliminating postoperative vomiting and retching, will undoubtedly reduce the number of recurrences. All these newer methods must be studied by the modern follow-up to ascertain their true value.

Research a Cooperative Undertaking.—Research can no longer be regarded as the individual craftsman's occupation who appropriates a field or a problem and develops it irrespective of time or practical demands. It has become a cooperative undertaking among specialists with sufficient pressure from the public supporting the undertaking to make it desirable on the part of the investigator to keep an eye on the product. Research is no longer a matter for the schools and universities only, where the development of men is the prime object, but in its advanced stage it becomes the work of special institutions where the immediate as well as the remote benefits to society are the chief considerations. Research has become a form of service in which the individual worker counts only as much as his output is worth to society at large.—Theobald Smith: *Edinburgh M. J.* **31**:240 (April) 1924.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, Albany

14: 281-375 (April) 1924

Public Health as Career. M. Nicoll, Jr., Albany, N. Y.—p. 281.
Epidemiologic Intelligence and Public Health Statistics. N. V. Lothian, Geneva, Switzerland.—p. 287.
Per Capita Milk Consumption from Point of View of Public Health Officer. H. Emerson, New York.—p. 291.
Diet and Disease. G. Lusk, New York.—p. 297.
Status of Bacterial Food Poisoning in United States. J. C. Geiger, Chicago.—p. 302.
Danger of Absorption of Toxin of Bacillus Botulinus Through Fresh Wounds and from Mucous Surfaces. J. C. Geiger, Chicago.—p. 309.
Diseases of Pressers. G. M. Price, New York.—p. 310.
Case of Carbon Monoxid Poisoning. F. W. Fabian, East Lansing, Mich.—p. 314.
Investigation of Hazards from Use of Manufactured Gas in Baltimore. J. H. Shrader, Baltimore, and C. W. Mitchell, Washington, D. C.—p. 316.
*Precipitation Test for Syphilis as Public Health Laboratory Procedure. L. C. Havens and M. L. Taylor, Montgomery, Ala.—p. 323.
Multiple Cultures in Diagnosis of Diphtheria. C. J. Bartlett and P. E. Bransfield, New Haven, Conn.—p. 327.

Kahn Test for Syphilis.—The Wassermann reaction and the Kahn precipitation test have been compared by Havens and Taylor in 1,395 serums. There was complete agreement in 1,260, or 90.3 per cent., and relative agreement in thirty-three more, making a total agreement of 92.7 per cent. The widest disagreement occurred in sixty-nine treated cases.

Annals of Surgery, Philadelphia

79: 481-642 (April) 1924

*Management of Cranial Injuries Based on New Grouping. J. S. Rodman and B. B. Neubauer, Philadelphia.—p. 481.
Arthroplasty on Temperomandibular Joint. G. M. Dorrance, D. Webster and H. McWilliams, Philadelphia.—p. 485.
Malignant Tumors of Thyroid. W. P. Herbst, Jr., Rochester, Minn.—p. 488.
*Exophthalmic Goiter Resulting in Blindness from Corneal Ulcers. J. W. Hinton, New York.—p. 495.
*Fistulae and Cysts of Neck. B. Lipshutz, Philadelphia.—p. 499.
*Postoperative Pulmonary Complications. W. E. Lee, Philadelphia.—p. 506.
*Angina Pectoris and Surgical Conditions of Abdomen. F. A. Willius, Rochester, Minn.—p. 524.
*Noncalculous Intermittent Biliary Obstruction Following Cholecystectomy. E. S. Judd and V. G. Burden, Rochester, Minn.—p. 533.
Acute Appendicitis in Childhood: Analysis of 145 Cases. F. Beekman, New York.—p. 538.
*Fracture of Anterior Superior Spine of Ilium by Muscular Violence. L. Carp, New York.—p. 551.
*Prognosis in Giant Cell Sarcoma of Long Bones. W. B. Coley, New York.—p. 561.

Classification and Management of Cranial Injuries.—Intracranial pressure or tension is made the basis of classification of cases of cranial injury by Rodman and Neubauer: Group 1, no increase in intracranial tension; Group 2, moderate increase in iptracranial tension; Group 3, marked increase in intracranial tension. The treatment of Group 1 cases is nonoperative and consists of rest in bed (from four to five days), ice-cap to the head and sedatives as needed. The indications for treatment of Group 2 cases are also nonoperative and consist of rest in bed, ice-cap to the head, elevation of the head of the bed, therapeutic spinal puncture and intravenous injection of hypertonic saline (from 60 to 80 c.c. of a 15 per cent. solution) or magnesium sulphate by rectum. Group 3 cases call for operative relief of tension, in addition to the measures outlined in the preceding two groups. It is the authors' practice to perform a subtemporal decompression on the right side with drainage and at times a bilateral subtemporal decompression.

Exophthalmic Goiter Causes Corneal Ulcer.—Corneal ulcers may develop at any stage in exophthalmic goiter. Local and general therapy has given very unsatisfactory results. Hinton finds that partial resection of the thyroid gland seems to offer the best chance of arresting corneal ulceration in exophthalmos, resulting from exophthalmic goiter as in a case cited.

Fistulas and Cysts of Neck.—This paper is based on Libshutz' personal observation of operation on two complete lateral fistulas, two thyroglossal cysts and fistulas and one blood cyst of the neck. Lipshutz believes that the remnants of the thymopharyngeal duct, indicating the course of the caudal migration or descent of the thymus gland from the third pharyngeal pouch to its site in the thorax, offers a tenable explanation for many of the lateral fistulas of the neck.

Postoperative Pulmonary Complications.—Lee suggests that the phenomena of pulmonary collapse of varying degrees, together with pulmonary embolism and infarction, are the real etiologic factors in postoperative pulmonary complications. All other factors, such as anesthesia, infection (either preoperative or postoperative), preexisting lung disease, old age and debility, and the chilling of the body are contributory only.

Angina Pectoris and Surgical Conditions of Abdomen.—In eighty-six cases in which there was sclerosis of the coronary arteries, the gallbladder was diseased in 24 per cent.

Biliary Obstruction Following Cholecystectomy.—Judd and Burden believe that the most potent cause of persistence of symptoms after cholecystectomy is the delay in coming to operation. Patients are seen who have had definite symptoms of biliary disease for fifteen years, many having suffered irreparable damage to the liver and pancreas. It is misguided optimism, to expect that removal of the gallbladder, although diseased and full of stones, will always relieve such patients of their symptoms. It is becoming more generally recognized that the liver, pancreas and appendix are commonly infected with the gallbladder. Persistence of infection in these organs is often a cause of recurrence of symptoms after cholecystectomy. Such symptoms may continue for several months after operation and then disappear, but in a certain number ultimate cure does result, and at the second operation the meager findings do not explain the patient's symptoms. Judd and Burden have seen a number of such patients relieved by drainage of the common duct.

Fracture of Anterior Superior Spine of Ilium.—Twenty-one cases are reviewed by Carp. All the patients were males, a large pecentage being athletic and muscular. Hyperextension of the trunk on the thigh and a strong pull of the sartorius and tensor fascia femoris caused the trouble. The end-result was good in all cases.

Prognosis in Giant Cell Sarcoma of Bone.—A review of fifty cases convinced Coley that it seems necessary to modify the opinion strongly held by most leading pathologists today that giant cell sarcoma is always benign and never gives rise to metastases.

Archives of Occupational Therapy, Baltimore

3: 83-168 (April) 1924

One Hundred Years of Occupational Therapy. L. J. Haas, White Plains, N. Y.—p. 83.
Relationship of Occupational Therapy to Rehabilitation. F. G. Elton.—p. 101.
Preindustrial Value of Occupational Therapy in Mental Hospitals. E. A. Foley, Chicago.—p. 109.
Restoration of Crippled. W. F. Faulkes.—p. 113.
Reconstruction Schemes in Hospitals for Mental and Nervous Disorders. T. B. Kidner, New York.—p. 117.
Profitable and Interesting Occupation. R. T. Taylor, Baltimore.—p. 121.
Music as Occupational Therapy. E. Macomber.—p. 125.

Atlantic Medical Monthly, Harrisburg, Pa.

27: 399-466 (April) 1924

Postoperative Anuria. F. E. Keene, Philadelphia.—p. 399.
Calculus Anuria. J. R. Caulk, St. Louis.—p. 401.
Theoretical Aspects of Problem of Anuria. J. E. Sweet, Philadelphia.—p. 405.
*Chronic Duodenal Ileus. J. P. Griffith, Pittsburgh.—p. 410.
*Relation of Cardiovascular Disease to Symptoms in Abdomen. J. A. Lichty, Clifton Springs, N. Y.—p. 419.
Treatment of Peritonitis Following Ruptured Appendix. A. F. Hardt, Williamsport, Pa.—p. 423.
*Anemia in Infants. D. H. Boyd, Pittsburgh.—p. 428.

Chronic Duodenal Ileus.—Griffith reports six cases in which there was definite dilatation and thickening of the

terminal duodenum and duodenojejunostomy seemed to be the procedure of choice for the relief of the condition present. Griffith emphasizes the point that exploration of the abdomen in search of chronic pathology in gallbladder, stomach, duodenum or appendix is not complete until the terminal portion of the duodenum is examined.

Cardiovascular Disease Causes Abdominal Symptoms.—Lichty has found that a large proportion of patients suffering from cardiovascular disease describe as their first and leading symptoms those referable to the digestive system. In the course of a physical examination of a supposed gastrointestinal case, unless one has always in mind the possibility of a primary cardiovascular disease, he will be very likely to misinterpret the symptoms. In the treatment of a patient suffering from cardiovascular disease, unless one appreciates the relation of circulatory disturbances to gastro-intestinal conditions, the so-called specific heart medication may result in miserable failure.

Anemia in Infants.—Boyd reports two cases of severe anemia in children from the same mother in successive pregnancies. He believes that these cases support the theory of a congenital etiologic factor in the production of this anemia. Some additional influence, poor food supply, defective hygiene, chronic infection such as syphilis or tuberculosis, may contribute to the development of the anemia in these predisposed cases.

California and Western Medicine, San Francisco

22: 133-190 (April) 1924

Treatment of Fractures. F. R. Fairchild, Woodland, Calif.—p. 133.
Congenital Hypertrophic Pylorie Stenosis in Infants. Forty-Seven Cases. G. Cochran, Los Angeles.—p. 137.
Perforative Appendicitis; Appendectomy vs. Drainage. S. M. Sproat, Portola, Calif.—p. 141.
Kidney and Ureteral Stone Surgery. H. L. Kretschmer, Chicago.—p. 143.
Justification for Sterilization. R. Duncan, Los Angeles.—p. 147.
Evolution of Roentgen-Ray Therapy in Higher Voltages. A. Soiland, Los Angeles.—p. 148.
Rôle of Alkalies in Treatment. A. Davidson, Los Angeles.—p. 150.
Mental Disorders Considered as Maladjustment or Broken Adaptation to Environment. G. E. Myers, Los Angeles.—p. 153.

Canadian Medical Association Journal, Montreal

14: 279-362 (April) 1924

Surgeon and Student. O. Klotz.—p. 280.
*Endemic Goiter. W. D. Keith.—p. 284.
Operation of Ceco-Colo-Plicopexy. H. M. W. Gray and M. B. Aberdeen.—p. 290.
*Bacteriology of Ureteral Cultures. D. W. MacKenzie and W. J. Cochrane.—p. 293.
*Incidence of Diabetes Mellitus in Diseases of Gallbladder and Passages. I. M. Rabinowitch.—p. 296.
Preoperative and Postoperative Purgation. R. O'Callaghan.—p. 297.
Hyperthyroidism. I. R. Bell.—p. 299.
*Case of Henoch's Purpura. D. Kilgour.—p. 302.
Dysmenorrhea as Result of Disturbance of Function of Endocrine Glands. A. Bercovitch.—p. 307.
Kidney Disease from Viewpoint of Biochemist. R. C. Hall.—p. 311.
Case of Persistent Aciduric Intestinal Flora in Man. G. B. Reed and T. R. Little.—p. 314.
Two Cases of Arthritis Simulating Acute Rheumatic Fever Complicating Pneumonia. H. S. Whiting.—p. 317.
Fracture of Clavicle, Acromion Process and Surgical Neck of Scapula. A. Groves.—p. 318.
Infantile Rickets in Vienna. H. P. Wright, Montreal.—p. 320.

Endemic Goiter in British Columbia.—According to Keith, British Columbia lends itself to a marked incidence of goiter in man and animals, and, therefore, goiter is not only a public health question, but an economic one. Endemic goiter, as found in the Pemberton meadows, is said to be a condition occurring in virgin soil with a remarkably pure water supply, and only inhabited by white men during the last thirty or forty years. Animals and human beings are very sensitive to goiter in this district; they did not bring it with them but aquired it shortly after coming into the valley. Unlike McCarrison's observations that the farther down the stream the greater the incidence, in this valley the farther up the stream the more pronounced is the occurrence of the disease. These facts, and the fact that goiter in the valley has entirely disappeared through the use of iodin, leads Keith to conclude that endemic goiter in British Columbia is an iodin deficiency disease. He suggests that 1 minim of tincture of iodin, or 1 grain of sodium iodid, be given daily, for thirty days, during the sixth month and again during the eighth month of pregnancy when the termination of pregnancy occurs in the late winter or early spring. The sixth month is thought advisable because it is just before the sixth month that stainable colloid is found in the acini of the thyroid. He suggests also that the same treatment be given to all women who have a noticeable goiter during pregnancy, and that one course of iodin of 30 minims, 1 minim a day, be given every pregnant woman sometime during the last two months of pregnancy in all regions where goiter is common. In this way cretinism and myxedema among the new-born will become negligible. Iodin should be administered early in all cases before the structure of the gland is permanently altered.

Bacteriology of Ureteral Cultures. — MacKenzie and Cochrane made a bacteriologic study of the urine from 897 cases as obtained from the kidney by means of a ureteral catheter. One third of the cases included lower urinary tract lesions and strictly nonurologic conditions. Organisms of the coliform group were found in 27.5 per cent. of all examinations; gram-positive bacilli in 2 per cent.; organisms of coccal group in 12 per cent.; sarcinae and yeasts (contamination), 0.5 per cent. In 57 per cent. of the trials the culture was sterile. Of the colon-typhoid-dysentery group, *Bacillus coli-communis* and *communior* were the predominating varieties.

Incidence of Diabetes in Gallbladder Disease.—Rabinowitch asserts that routine examination of the blood sugar of patients who presented symptoms of cholelithiasis, showed that in about 80 per cent. of all cases a hyperglycemia was found, though not of a sufficient degree to produce glycosuria. Among the last 45,995 admissions to the wards, there were 366 patients who had disease of the gallbladder and its passages, including 178 cases of cholelithiasis, 171 cases of cholecystitis and 17 cases of acute pancreatitis. There were 319 cases of diabetes mellitus and 18 patients who suffered from both diabetes mellitus and disease of the gallbladder and its passages. The incidence of diabetes was greater in cholecystitis than in cholelithiasis, and in acute pancreatitis the incidence was forty times greater than chance would allow. From a biometric point of view a causal relation is demonstrated between diabetes mellitus and diseases of the gallbladder and its passages.

Henoch's Purpura.—The unusual features of the case reported by Kilgour were: (1) the extreme loss of blood from the nose and subsequent marked anemia; (2) no history or signs of joint pains.

Endocrinology, Los Angeles

8: 189-296 (March) 1924

*Studies on Diabetes. K. Petren, Lund, Sweden.—p. 189.
Clinical Experiences in Organotherapy; Stimulation of Body Growth. T. A. McGraw, Jr., Detroit.—p. 196.
*Diabetes, Refractory to Insulin, Relieved by Antisyphilitic Treatment. P. H. Charlton, Columbus, Ohio.—p. 235.
Case of Postoperative Myxedema After Thyroidectomy. E. Bonilla and C. B. Soler, Madrid, Spain.—p. 237.
*Ovaries and Menstruation. E. Ramirez, Mexico, D. F.—p. 243.

Studies on Diabetes.—Among patients not previously treated in hospital but who died there in coma, the duration of the disease, in Petren's experience, has never been over four years, which shows the importance of the duration of the disease in prognosis. Taking those patients into consideration who were treated at the clinic and who later died at home, there were found several cases of more than four years' duration, thus confirming the conclusion that treatment had a favorable influence on the duration of the disease. Petren prefers his dietetic method of treatment. He concludes from his results that in every case of severe diabetes there is a threshold for the nitrogen metabolism, above which acidosis ensues. If, however, the nitrogen metabolism is brought below this threshold, the acidosis diminishes and disappears from whatever height it may have reached. Carbohydrate withdrawal in diabetes as well as in health causes moderate acidosis, but the marked acidosis ending in coma and present only in severe diabetes results from the extreme sensitivity of the nitrogen metabolism which is a pronounced characteristic of severe diabetes; this sensitivity appears in the severest cases of diabetes even if the nitrogen metabolism

is very low. According to Petren's researches, a meal free from carbohydrates and relatively rich in nitrogen raises the blood sugar curve about 0.015 per cent. Among fatal cases of diabetes observed, the frequency before 30 years of age was practically the same in the two sexes, but after that age the disease predominated in males. Petren concludes, therefore, that the disease before 30 years of age is due to endogenous causes, in all probability always hereditary, but that in the fourth decade exogenous factors might gain sufficient importance as to cause at times also fatal diabetes. His researches regarding the amount of bilirubin in the blood in diabetes have demonstrated that when the blood sugar is normal bilirubin is, as a general rule, also normal while there is often an increase in bilirubin in hyperglycemia. A further series of determinations in the same patients shows that the curve bilirubin may parallel the fall of the blood sugar curve during treatment; proving that there is a certain relation, if not quite constant, between the quantity of blood sugar and bilirubin in the blood. Consequently the former theory, that the analysis of bilirubin permits a classification of diabetic cases into those with or without an affection of the liver, is refuted. A series of cases is reported in which the D:N quotient was very high for many days, denoting, perhaps, the formation of sugar from fat. Analysis showed that in a large number of subjects an increase of the incretory function of the pancreas set in during the dietetic treatment.

Diabetes Relieved by Antisyphilitic Treatment.—Charlton relates the case of a man, aged 50, who complained of dizziness and polyuria. A diagnosis of diabetes was made. Physical examination revealed evidence of marked pulmonary tuberculosis involving both lungs, and posterior cervical adenitis. No history of venereal infection was elicited. He was placed on a diabetic diet and later was given insulin. Nearly two months after admission to hospital his blood Wassermann reaction was found to be positive. He was given an injection of arsphenamin, potassium iodid by mouth, and mercurial inunctions. For three days following this, his urine was sugar free. Death from a pulmonary hemorrhage ensued after about five weeks. The pancreas was somewhat large, and on microscopic section, the islands of Langerhans were found to be almost completely lacking. In a few places groups of partially degenerated cells were seen. The degenerated areas were not fibrous but showed granular necrosis.

Ovaries and Menstruation.—Ramirez noted that in seven castrated rabbits characteristic atrophy of the muscularis of the uterus occurred. The mucosa was well preserved. Lipoid extracted from the menstrual blood of women did not arrest the atrophy following castration in the rabbits, but led to destruction of the superficial mucosa, the separation of the epithelial elements in the submucosa and intense sanguinous inundation. The alterations produced are much like those that occur in the uterine mucosa of women. From previous studies it is believed that these experimental estrual changes are due to a lipoid produced by the interstitial cells of the ovary, carried to the uterus and discharged into the menstrual flow.

Illinois Medical Journal, Oak Park

15: 229-304 (April) 1924

Mysteries of the Abdomen. J. B. Deaver, Philadelphia.—p. 246.
Cancer of Stomach. F. G. Dyas, Chicago.—p. 250.
Role of Radium in Tumors of Uterus. T. E. Jones, Cleveland.—p. 255.
Full Time Health Officer. E. W. Weis, La Salle.—p. 258.
Trifacial Neuralgia. A. W. Adson, Rochester, Minn.—p. 262.
Recurrence of Tonsils After Tonsillectomy. C. H. Long, Chicago.—p. 266.
Peptone Therapy in Asthma and Other Anaphylactic Syndromes. H. P. Miller, Rock Island.—p. 269.
*Differential Blood Count in Hyperthyroidism. J. H. Hutton, Chicago.—p. 272.
Unusual Eye Manifestations of Cerebral Syphilis. Case. C. B. Welton, Peoria.—p. 274.
Traumatic Abscess of Nasal Pharanx in Children. Five Cases. C. F. Yerger, Chicago.—p. 278.
Our Changing Problem. A. M. Miller, Danville.—p. 282.
Treatment of Hay-Fever, Hyperesthetic Rhinitis and Bronchial Asthma, Based on Calcium Content of Blood Serum. F. J. Novak, Jr., and A. R. Hollender, Chicago.—p. 283.
Tonsillar Disease and Sterility in Women. A. L. Stapler, Chicago.—p. 290.
Surgery of Spastic Paralysis. F. J. Gaenslen, Milwaukee.—p. 295.

Differential Blood Count in Hyperthyroidism.—Hutton presents the results of his study of twenty-nine cases of hyperthyroidism, each having a metabolic rate below normal and presenting symptoms believed to be due, in part at least, to thyroid deficiency. In some of them the thyroid was believed to be responsible for all of the symptoms while in others there were complaints not due to thyroid disturbance. In 79.3 per cent. of the cases the thyroid showed its influence on the blood regardless of the accompanying condition. The average metabolic rate was minus 12 per cent. The polymorphonuclear count averaged 60 per cent.; twenty-four cases had less than 65 per cent. of polymorphonuclears, while only six cases had 65 per cent. or more. Of two or more cases having metabolic rates about equal it was found that the one having the lowest polymorphonuclear count tolerated the largest doses of thyroid with a correspondingly greater clinical improvement. Hutton believes that there is a rather definite relation between the percentage of the polymorphonuclears and the activity or lack of activity of the thyroid; and also that a deficient function of that gland is so frequently accompanied by a reduction in the number of polymorphonuclears as to make the differential blood count of some value in the study of thyroid function.

Journal of Experimental Medicine, Baltimore

39: 497-624 (April) 1924

*Pathogenesis of Rheumatic Fever. H. F. Swift, New York.—p. 497.
Effect of Digestive Juices on Potency of Botulinus Toxin. J. J. Bronfenbrenner and M. J. Schlesinger, Boston.—p. 509.
*Effect of Anesthesia and of Sedatives on Serum Therapy of Experimental Botulism. J. J. Bronfenbrenner and H. Weiss, Boston.—p. 517.
*Survival of Febrile Herpetic and Allied Viruses in Vitro. J. E. McCartney, New York.—p. 533.
Oxidation and Reduction of Pneumococcus. III. Reduction of Methylene Blue by Sterile Extracts of Pneumococcus. O. T. Avery and J. M. Neill, New York.—p. 543.
*"Cure" of Syphilis in Rabbit with Arsphenamin. A. M. Chesney and J. E. Kemp, Baltimore.—p. 553.
Correlation of Phenomena Occurring During Growth of Pneumococcus. H. J. Morgan, New York.—p. 565.
Interaction of Two Fragments of Pulsating Heart Tissue. A. Fischer, Copenhagen, Denmark.—p. 577.
Differentiation and Keratinization of Epithelium in Vitro. A. Fischer, Copenhagen, Denmark.—p. 585.
*Spiral Organism in Wild Rat. H. Mooser, Mexico City.—p. 589.
Rate of Healing of Wounds. J. Brownlee, London.—p. 603.
Reverse Selective Bacteriostatic Action of Acid Fuchsin. V. Burke and C. E. Skinner, Pullman, Wash.—p. 613.

Pathogenesis of Rheumatic Fever.—There are two distinct types of response on the part of the body to the infectious agent of rheumatic fever; viz., proliferative and exudative. Swift contends that the perivascular proliferative type of lesion, resembling an infectious granuloma, explains the subacute and chonic character of the clinical symptoms in many cases. Marked exudation of serum into the periarticular tissues, and of serum and cells into the joint cavities are concomitants of the acute arthritis occurring with high fever and general intoxication; these acute exudations disappear following the administration of certain drugs. But their disappearance does not mean, necessarily, that all lesions of the proliferative type have resolved. In fact, it is known that these last mentioned lesions, when present in the subcutaneous tissues, often continue for months; and from analogy it may be concluded that they have a similar persistent character in other tissues of the body invaded by the causative agent of rheumatic fever.

Anesthesia Delays Action of Botulinus Toxin.—Bronfenbrenner and Weiss state that if animals suffering from botulinus poisoning are placed under anesthesia, the intoxication proceeds much more slowly, and life is prolonged by a period approximately equal to that during which the administration of the anesthetic is continued. When anesthesia is discontinued, the intoxication proceeds at its usual rate. Anesthesia, by ether, is effective in this manner whether the toxin is given per os or intraperitoneally. Anesthesia delays the process of intoxication not only when administered immediately after the intake of toxin, but when administered much later after the intoxication has already progressed far enough to cause definite objective symptoms of poisoning. At this late stage of intoxication, the unsupported serum therapy of botulism in guinea-pigs usually remains without effect. If, however, the animals are anesthetized at this time and kept

under the influence of ether for some time, antitoxin therapy becomes effective. Indeed, the antitoxin treatment can be delayed further for several hours, provided the animal is kept under anesthesia during the interval. Results of a similar nature were obtained with luminal—sodium, nitrous oxid-oxygen mixture, and morphin used in place of ether.

Survival of Herpes Virus in Vitro.—McCartney's studies fail to confirm the statements previously made that microorganisms of the class of globoid bodies of poliomyelitis may be cultivated in the Smith-Noguchi medium from the so-called virus of lethargic encephalitis. They show equally that the herpes virus does not multiply in this medium. The experiments indicate, moreover, that the medium is unfavorable to the survival of the virus, while ordinary broth under aerobic conditions is more favorable for maintaining the activity of both the encephalitic and the herpes viruses. Finally, it is shown that with a suitable technic the viruses can be passed from the brain of one rabbit to that of another through a long series without contamination with cocci or other common bacterial forms. Hence, McCartney regards all reports of the finding of ordinary bacteria in the brain of cases of epidemic or lethargic encephalitis as instances of mixed or secondary infection arising during life, or examples of postmortem invasion of the body, or of faulty technic at the necropsy.

Determining Cure by Antisyphilitic Remedies.—Evidence is offered by Chesney and Kemp in favor of the view that the most satisfactory method of evaluation of antisyphilitic agents in experimental syphilis of the rabbit is that of lymph node transfer. Evidence is also offered in support of the view that the state of refractoriness toward a second inoculation exhibited by syphilitic rabbits may be explainable on the basis of either an acquired immunity or persistence of a focus of living spirochetes in the body.

Relation of Spiral Organism Found in Wild Rat to Rat Bite Fever.—Two cases of rat bite fever, with a typical fever course and a maculopapular exanthem, led Mooser to search for a possible relationship between these cases and infected rats. Only clinical observations could be made of the cases. Therefore, the study was limited necessarily to rats. In one rat a spiral organism morphologically identical with one known in Japan as the causative agent of sodoku was found. The organism was pathogenic for white rats and guinea-pigs, the infection being fatal for guinea-pigs. Eye lesions were found in all the infected guinea-pigs and the spiral organisms were demonstrated in the discharge from the eyes and also within the cornea. Similar eye lesions were found in most of the infected rats and the secretion from the eyes of one of them was demonstrated to be infectious for guinea-pigs. The eye lesions constitute an evident source for the spiral organisms transmitted by biting, and not improbably the other one. Cases of Weil's disease are reported to be caused by the bite of a rat and it is noteworthy that eye lesions occur in spirochetosis icterohemorrhagica (Mason).

Journal of Immunology, Baltimore

9: 75-87 (March) 1924

Bacterial Anaphylaxis with Pneumococcus. H. Zinsser and T. B. Mallory, Boston.—p. 75.

Tuberculin Hypersensitiveness without Infection in Guinea-Pigs. H. Zinsser and S. A. Petroff, Boston.—p. 85.

Journal of Infectious Diseases, Chicago

34: 329-432 (April) 1924

*Streptococci in Relation to Etiology of Epidemic Encephalitis. E. C. Rosenow, Rochester, Minn.—p. 329.

Hydrogen Ion Studies. XI. Preparation of Dry Antitoxin and Agglutinin Powders. E. F. Hirsch, Chicago.—p. 390.

Vitamins in Bacterial Growth. VIII. Relation of Substances Formed by Bacillus Coli to Growth of Yeast. R. C. Robertson, Chicago.—p. 395.

*Human Inoculations with Filtered Nasal Secretions from Acute Coryza. R. C. Robertson and R. L. Groves, Chicago.—p. 400.

Oxydase Activity and Isolation of Pure Cultures of Bacteria. L. D. Felton, Boston.—p. 407.

New Indicator for Testing Reducing Power of Bacteria. L. D. Felton, Boston.—p. 414.

*Experimental Poliomyelitis in Rabbits. M. Nevin and F. R. Bittman, New York.—p. 420.

*Spontaneous Recovery of Rabbit from Experimental Rabies. R. D'Aunoy, New Orleans.—p. 425.

*Spontaneous Encephalitis in Rabbits. E. W. Goodpasture, Pittsburgh.—p. 428.

Streptococci as Cause of Epidemic Encephalitis.—The experimental results obtained in eighty-one cases are reported by Rosenow. Somewhat peculiar streptococci, much alike in the different cases, have been isolated constantly from infected tonsils, teeth or nasopharynx during life, and from the brain after death. With this streptococcus in freshly isolated cultures, after as high as forty-four rapidly made subcultures, and after a series of animal passages, characteristic symptoms and lesions of different forms of encephalitis have been reproduced in animals. Peculiar neurotropic properties of the streptococcus have been noted in four species of animals, following various methods of inoculation. Intracerebral inoculation has given the best results. Results such as those seen in these experiments were not obtained with green-producing streptococci from sources other than encephalitis. The organism has been demonstrated in the lesions which develop spontaneously in man, and which have been produced experimentally in animals, and proved absent in adjacent normal tissues and in the brains of persons and animals that died from other causes. It has been shown to possess specific antigenic properties. Most of the strains are immunologically alike, as determined by agglutination experiments with hyperimmune serums. The serum of patients with acute forms of the disease agglutinated specifically the homologous and many heterogeneous strains.

Filter Passing Organism Not Cause of Coryza.—Nasal secretions secured by Robertson and Groves from eleven persons having acute uncomplicated coryza, after being diluted and passed through a Berkefeld filter, were sprayed on the nasal mucosa of 100 volunteers. The experiments presented no convincing evidence indicative of a filter passing organism as the exciting factor in acute coryza. During an attack of coryza definite variations were noted in the bacterial flora of the secretions. During the onset and early stages of the attack, there was a marked diminution of the total bacterial flora, with an equally marked predominance of one of the normal inhabitants—usually *Staphylococcus albus*. During the purulent stage of the attack, a marked increase of all organisms over the normal flora was observed, although the predominance of one organism still remained. The later stages of the attack were marked by a gradual return to the normal flora of health.

Experimental Poliomyelitis.—In experiments on rabbits made by Nevin and Bittman, a 5 per cent. unfiltered suspension of poliomyelitis virus was used. Symptoms resembling poliomyelitis were observed in a small number of young rabbits. A larger number of rabbits died after varying periods of incubation, but without showing characteristic symptoms of poliomyelitis. The virus did not show any increasing virulence by passage through rabbits. In one series of animals, the virus apparently died out after one passage. In the other series, it apparently died out after passage through a monkey and three sets of rabbits. Brain suspension from this third passage through rabbits, inoculated in both monkeys and rabbits failed to have any effect. In the animals which died, the factor of infection was carefully controlled by cultures; also the possibility of anaphylactic shock due to a foreign protein was taken into account by inoculating a series of young rabbits with normal rabbit brain suspension. All of these controls were negative.

Spontaneous Recovery from Experimental Rabies.—A case of spontaneous recovery of a rabbit from rabies after full development of symptoms following intracerebral injection of fixed dessicated virus is reported by D'Aunoy. Saliva from this animal obtained sixteen days after inoculation when injected intracerebrally into rabbits, produced typical symptoms of rabies with Negri bodies in brain sections. Forty days after inoculation the animal's saliva was no longer infectious. Blood serum secured seventeen and ninety days after injection showed no appreciable antirabicidal action.

Spontaneous Encephalitis of Bacterial Origin.—Large gram-positive bacillary organisms have been demonstrated by Goodpasture in the cerebral lesions of spontaneous encephalitis in rabbits. The cerebral lesions are vascular in distribution and are the manifestation in the brain of a

generalized infection which may produce similar lesions in the lungs and kidneys in which morphologically identical organisms have been found.

Kentucky Medical Journal, Bowling Green

22: 111-136 (April) 1924

Insulin in Diabetes. V. E. Simpson and F. Speidel, Louisville.—p. 114.

Mental Hygiene, Albany, N. Y.

8: 225-424 (Jan.) 1924

Critic of Psychanalysis. A. Kardiner, New York.—p. 226.
Fundamental Principles of Psychanalysis. M. A. Meyer, New York.—p. 264.
One of Many Overenthusiastic Books on Psychanalysis. A. Stern, New York.—p. 269.
Individual and Group. A. Stern, New York.—p. 281.
French View of Psychotherapy. D. Fryer, Salt Lake City.—p. 293.
Rational Bases of Law. S. S. Glueck, Boston.—p. 306.
Nursing Education and Mental Hospital. W. L. Russell, White Plains, N. Y.—p. 316.

Minnesota Medicine, St. Paul

7: 227-308 (April) 1924

*Syphilitic Aortitis. F. A. Willius and A. R. Barnes, Rochester.—p. 227.
Anatomy and Mechanics of Fractures of Femur. W. H. Cole, St. Paul.—p. 234.
*Nonoperative Treatment of Recent Fractures of Femur. H. W. Meyerding, Rochester.—p. 237.
Operative Treatment of Fractures of Femur. C. A. Reed, Minneapolis.—p. 247.
Treatment of Tuberculosis. A. T. Laird, Nopeming.—p. 257.
*Osteochondromatosis of Hip Joint. M. S. Henderson, Rochester.—p. 261.
*Thrombo-Angiitis Obliterans. Case. H. W. Christianson, Wykoff.—p. 265.
Students' Health Service at University of Minnesota. H. S. Diehl, Minneapolis.—p. 271.
Apparent Deformities of Pillars of Fauces After Ideal Tonsillectomy. F. J. Pratt, Minneapolis.—p. 277.

Syphilitic Aortitis.—One hundred and forty patients with syphilitic disease of the aorta have been observed by Willius and Barnes for from one to eight years. Sixty-four patients in an advanced stage of the disease were traced. Thirteen were worse, thirteen unchanged, and six improved. Thirty-one had died of heart disease on an average of fourteen months from the time of examination. In one case the cause of death could not be ascertained. Fifty of the 140 patients had had anginal attacks. The blood Wassermann reactions were strongly positive in ninety-six cases, and the spinal fluids in twenty-four cases indicated syphilis. In five patients, in whom the blood Wassermanns were negative, the spinal fluids were positive; the total of cases with positive serology was 101 (72 per cent.). In only twenty-one patients did roentgenograms reveal dilatation of the aorta. It is obvious that neither the Wassermann reaction nor roentgenography is infallible in the recognition of aortic syphilis. On the other hand, there was no instance in this study in which physical diagnosis failed to reveal evidence indicative of disease of the aorta. In the early stage of the disease no cardiac deaths occurred. In the moderately advanced stage, cardiac deaths occurred in 11 per cent. of the patients, while in the advanced stage, heart disease produced 48 per cent. of the deaths. The total cardiac mortality was 38 per cent.

Nonoperative Treatment of Fractures of Femur.—The Whiteman treatment of recent fractures of the head and neck of the femur is regarded by Meyerding as efficient, and open operation is regarded as unnecessary. In recent fractures of the shaft, nonoperative treatment has apparently given more satisfactory results, although a comparison of these cases with those in which operation was performed is unjust, since open reduction was performed in only the more difficult cases. Anesthesia, manipulation and retention by extension with Thomas splints, has been the method of choice in simple fractures. In twenty-seven of twenty-nine simple fractures treated conservatively, the results were satisfactory. Excellent results are obtained in supracondylar or condylar fractures in the lower shaft by flexion of the knee and extension. When the Steinman pin or ice tongs are used, they should be accurately placed anterior to the axis of the femur. Unless practically anatomic reposition is obtained in the intra-articular fractures by conservative treatment, arthrotomy and internal fixation is indicated. When, after reasonable attempts, conservative treatment has failed to give satisfactory reduction, then operation, reduction and fixation is advisable.

Osteochondromatosis of Hip Joint.—In Henderson's case repeated trauma was admitted. There was slight restriction of motion of the left hip joint in all directions. On flexing the hip, thus relaxing the anterior capsule, a mass could be felt, and some of the bodies could be palpated. The roentgen ray disclosed multiple loose osteocartilaginous bodies in the left hip joint. The joint was exposed by a small Smith-Peterson incision running parallel to the long axis of the neck and extending into the capsule, and thirty-one free osteocartilaginous bodies were removed. A definite tumor formation was found on the anterior intertrochanteric line, at a point where the synovial membrane was reflected from the bone and where the stratum synoviale was probably three or four cells deep, also, two bodies in a pocket at the superior margin of the acetabulum where the synovial membrane was reflected from the bone. These findings serve to corroborate the embryologic and neoplastic theories of the origin of these masses.

Thrombo-Angiitis Obliterans.—Christianson's patient was of French, Irish and German descent. There was a persistent leukocytosis in this case, as in one previously reported case.

New York State Journal of Medicine, New York

24: 533-596 (April 11) 1924

Nose, Throat and Ear Symptoms of Significant Interest to General Practitioner. D. S. Dougherty, New York.—p. 533.
Appraisal of Signs and Symptoms of Pulmonary Tuberculosis. R. E. Plunkett, Albany.—p. 539.
*Insulin in Juvenile Diabetes; Diets in Grams per Kilo Body Weight. H. Gray, Boston.—p. 543.
Why Reregistration is Necessary in New York. S. D. Hubbard, New York.—p. 547.
Chiropractic from Inside. A. L. Seyse, Arcade.—p. 550.

Diet in Juvenile Diabetes.—Gray pleads for the expression of diet in calories per kilogram and grams per kilogram of body weight, and for the expression of weight in per cent. above or below normal. This style of expression offers two advantages. It clarifies comparison of the practices in different clinics, and facilitates the ordering of diets. It shows that the consensus of current practice, so far as published to date by the best students of diabetes, favors for children of the first decade a diet of 68 calories per kilogram, or about 70 per cent. above the basal heat need of normal children of the same weight, a carbohydrate and protein allowance each of about 3 gm. per kilogram, and fat of 5 gm. per kilogram, insulin 20 units a day or less.

Radiology, St. Paul

2: 197-286 (April) 1924

*Fundamental Facts Relative to Study of Vertebrae in Industrial Accident Cases. A. W. George and R. D. Leonard, Boston.—p. 197.
Distribution of Energy in Continuous Roentgen-Ray Spectrum. D. L. Webster, Stanford University, Calif.—p. 214.
*Renal Fluoroscopy at Operating Table. W. F. Braasch and R. D. Carman, Rochester, Minn.—p. 222.
Electrothermic Methods in Treatment of Neoplasms and Other Lesions. W. L. Clark, J. D. Morgan and E. J. Asnis, Philadelphia.—p. 233.
Roentgenotherapy for Lichen Simplex Chronicus or Neurodermatitis. C. A. Simpson and C. C. Caylor, Washington, D. C.—p. 247.
Blood Count and Blood Pressure in High Voltage Therapy. A. U. Desjardins and W. J. Marquis, Rochester, Minn.—p. 252.
Congenital Diaphragmatic Hernia. O. W. Swope, Wichita, Kan.—p. 260.
Myoma of Stomach and of Duodenum. J. D. Camp, Rochester, Minn.—p. 262.
Gastrojejunal Ulcer. D. B. Harding, Rochester, Minn.—p. 264.
Spasm in Middle of Esophagus. G. W. Grier, Pittsburgh.—p. 265.

Normal Variations of Vertebrae.—George and Leonard emphasize the fact that there is a normal standard vertebra, the normal limits, however, being somewhat variable and influenced by age, sex and occupation. Some of these normal variations are enumerated, particularly those due to age and occupation. The abnormal variations, consisting of congenital deformities, deformities due to trauma and deformities due to disease are considered.

Renal Fluoroscopy for Calculus.—When the usual methods of renal palpation, either external or with the finger in the

renal pelvis, fail to localize the stone, Braasch and Carman find that fluoroscopy will obviate unnecessary surgery. The greatest advantage of fluoroscopy is that it permits of more exact localization of the stone than any other method. This is accomplished by ascertaining the relative position of the stone, and by inserting either the surgeon's finger or some metal instrument into the renal pelvis and calyces. Often in this manner only can the exact position and level of the elusive stone fragment be discovered. In cases in which the kidney cannot be elevated and the abdominal wall is too fat for fluoroscopic penetration, the renal film may be a valuable adjunct to fluoroscopy.

Texas State Journal of Medicine, Fort Worth

19: 655-710 (April) 1924

Present Day Gynecology. F. C. Beall, Fort Worth.—p. 660.
Treatment of Prolapsed Ovaries. J. H. McLean, Fort Worth.—p. 663.
Is Total Hysterectomy the Operation of Choice in Uterine Fibroids or Other Conditions Requiring Hysterectomy? W. T. Black, Memphis, Tenn.—p. 664.
Sturmdorf Operation: Technical Advantages in Cervical Pathology. M. K. Robbie, San Antonio.—p. 667.
Uterine Procidentia: Surgical and Vaginal Route Problem. H. W. Crouse, El Paso.—p. 670.
Relation of Third Nerve to Sphenoidal Sinus. E. H. Cary, Dallas.—p. 675.
*Major Trigeminal Neuralgia: Avulsion of Sensory Root. C. W. Flynn, Dallas.—p. 677.
*Surgical Aspect of Headache and Pain in Head in Relation to Accident Insurance Work. E. R. Carpenter, Dallas.—p. 681.
*Head Injuries: Relative Value of Fundi Findings and Other Clinical Symptoms as Indications for Operative Interference. W. B. Thorning and W. Lapat, Houston.—p. 683.

Major Trigeminal Neuralgia.—Flynn reports six cases of major trigeminal neuralgia, in which he peformed the Frazier operation. The results have been satisfactory in all cases except one, in which the patient died of shock. He agrees that alcoholic injections should be reserved for the minor trigeminal neuralgias. Major trigeminal neuralgia is most satifactorily treated by the radical operation.

Surgical Aspect of Headache Following Head Injuries.—Carpenter believes that more than 75 per cent. of the late disabilities from head injuries in industrial work are due to headaches and to pain in the head which arise from injury to the dura mater and meninges, edema of the brain, spicules of bone, abscesses, cystic conditions, or from bony changes. Often, proper surgical procedures within a reasonable time after the injury will improve or relieve these discomforts.

Pressure of Spinal Fluid Significant in Head Injuries.—Thorning and Lapat are of the opinion that repeated fundus examinations were of no help in determining the treatment in the twelve cases cited by them. The pressure of the spinal fluid is regarded as the best indicator.

Virginia Medical Monthly, Richmond

51: 1-66 (April) 1924

Report on Patients Discharged from Catawba Sanatorium to January, 1922. J. B. Nicholls, Catawba Sanatorium.—p. 1.
Diabetes Mellitus. W. P. Jackson, Roanoke.—p. 7.
*Radiologic Treatment of Diseased Tonsils. J. W. Hunter, Norfolk.—p. 12.
Endocrinology. J. H. Hiden, Pungoteague.—p. 15.
*Murmurs in Diagnosis and Prognosis of Heart Disease. L. E. Stubbs, Newport News.—p. 18.
Obstetrics in Literature. M. P. Rucker, Richmond.—p. 23.
*Treatment of Toxemias of Pregnancy. G. Baughman, Richmond.—p. 28.
*Albuminuria in Relation to Disease of Tonsils. C. P. Jones, Newport News.—p. 31.
Sectional Method of Studying and Teaching Macroscopic Anatomy. J. W. Brodnax, Richmond.—p. 33.
Public Health, Practitioners and Universities. H. T. Marshall, University.—p. 35.
Nutritional Care of Premature Infants. S. Newman, Danville.—p. 39.
*Intussusception. W. L. Peple, Richmond.—p. 42.

Radiologic Treatment of Diseased Tonsils.—Hunter sees in the roentgen rays and radium a highly effective method for the treatment of diseased tonsils. Even in those cases in which no result has been obtained, no harm has been done and surgical intervention can still be considered.

Murmurs in Heart Disease. — Of 500 clinical records reviewed by Stubbs, mention is made of a murmur heard in one location or another in seventy-seven. Further analysis of these records shows that murmurs were present in many conditions other than heart disease. The murmur was indicative of valvular disease in but nine cases; it was present at the apex in fifty-four, in the second left space in twenty-eight, elsewhere in thirteen, in the second right space in nine. In all of the cases except mitral stenosis and aortic insufficiency the murmur was systolic in time; all of the mitral stenosis patients had also mitral insufficiency; three of the four aortic insufficiency patients had mitral insufficiency as well; not one time was the diagnosis of mitral insufficiency alone made. The murmur was indicative of organic disease of the valve in but nine cases. Thus it would seem justifiable to conclude that functional murmurs are much more frequent than organic murmurs.

Causes of Maternal Death.—Among 2,341 deliveries Baughman found nineteen deaths. Seven of the deaths were due to toxemia, two to sepsis, two to pulmonary tuberculosis, one to miliary tuberculosis, two to lobar pneumonia, one to decompensated heart, one to intestinal obstruction and one to embolus. The treatment employed in all of these complications is outlined.

Albuminuria with Tonsillitis.—Jones is convinced that routine tests will disclose the presence of albuminuria or other evidence of nephritis in the majority of cases of acute tonsillitis or other tonsillar infections, and that in cases of albuminuria of doubtful origin, careful examination of the pharynx may often determine the etiologic relationship of diseased tonsils. Thorough enucleation of the tonsils, including the subtonsillar tissue and adenoid vegetations, assures prompt cure and prevents the recurrence of the related albuminuria.

Intussusception Caused by Tumor.—Of six cases of intussusception seen by Peple three were due to tumors. One was an intussusception of the ileum, caused by a polypoid tumor the size of a walnut, with a moderate sized pedicle. The second was a small sessile growth in the wall of the ileum which constricted the lumen, necessitating a resection with end to end anastomosis. The patient made an uneventful recovery, but died in a few months from metastasis of the growth—a lymphosarcoma. The third case was an intussusception of the ileum into the cecum, transverse and descending colon. The starting point of the intussusception was a small tumor, two and one-half to three inches in length, attached to the inside of the ileum, about two feet above the ileocecal valve. Its point of attachment seemed to be an inverted diverticulum with a firm mass at its tip, the lumen being the size of a slate pencil. The gland structure in the tip of the inverted diverticulum was pancreatic tissue. All of the histologic structures of the pancreas were present—the lobules, the interlobular spaces, the interlabular ducts and the islands of Langerhans. Therefore, this was a case of accessory pancreas in the blind end of a diverticulum which had formed a pedunculated tumor in the lower ileum.

Wisconsin Medical Journal, Milwaukee

22: 505-556 (April) 1924

Public Health Work Pays. W. A. Evans, Chicago.—p. 506.
"Patent Medicine" Game: Gambling on Fear. A. J. Cramp, Chicago.—p. 513.
No "Short Courses" to M.D. Degree. L. F. Jermain, Milwaukee.—p. 517.
Vaccination Has Prevented Nation-Wide Epidemics. H. M. Guilford, Madison.—p. 521.
Voluntary Exposure Dangerous in Measles and Whooping Cough. H. B. Sears, Eau Claire.—p. 523.
Increasing Health and Happiness Aim of Health Boards. L. W. Hutchcroft.—p. 525.
Hygeia. J. M. Dodson, Chicago.—p. 527.
Public Health Sold by Wisconsin Antituberculosis Association. R. MacMillan, Milwaukee.—p. 529.
Cancer Curable Disease in Early Stage. J. P. McMahon, Milwaukee.—p. 534.
Decrease in Deaths from Typhoid Fever. F. F. Bowman, Madison.—p. 539.
Charity Clinics for Treatment of Venereal Diseases. C. A. Harper, Madison.—p. 541.
Nutrition in Fight Against Disease and Deformity. E. L. Sevringhaus, Madison.—p. 543.
Childbirth Mortality Reduced by Individual and Community Cooperation. C. H. Davis, Milwaukee.—p. 545.
Diphtheria no Longer "Plague." H. M. Guilford, Madison.—p. 548.
Prevention of Simple Goiter by Iodin. V. A. Gudex, Eau Claire.—p. 551.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 613-652 (April 5) 1924

*Cause and Significance of Dyspnea in Pulmonary Disease. J. Meakins.—p. 613.
*Comparison of Kahn and Wassermann Tests on 500 Serums. T. E. Osmond and D. McClean.—p. 617.
Colorimetric Method for Estimation of Diastase in Body Fluids. I. Cohen and E. C. Dodds.—p. 618.
*Causes of Failure in Removal of Tonsils and Adenoids. H. M. Wharry.—p. 620.
Deep Roentgen-Ray Therapy. J. C. Webb.—p. 622.
Halometer. R. H. Elliot.—p. 624.
Mechanics of Anterior Abdominal Wall. D. Waterston.—p. 624.
Case of Intestinal Obstruction Due to Adhesions. E. J. Bradley.—p. 625.
Hemorrhages of Infancy and Childhood. A. F. G. Spinks.—p. 625.
Pubopenile Ectopy of Testis. J. A. C. Forsyth.—p. 626.
Case of Anaphylaxis to Antivenom Serum. E. Faraker.—p. 626.

Significance of Dyspnea in Pulmonary Disease.—In cases which exhibit such an increased respiratory function as dyspnea, Meakin regards its significance as important. Its diagnostic and prognostic import is frequently in inverse ratio to the distress or discomfort it gives the subject. Therefore, the disturbances of function and structure which give rise to respiratory abnormality in pulmonary diseases should be clearly understood. The dyspnea of laryngeal and tracheal obstruction, bronchial obstruction, lesions of the alveoli and dyspnea due to nervous lesions are discussed in detail. The treatment of dyspnea in pulmonary diseases is held to be very unsatisfactory unless the cause can be removed. If this be accomplished the relief is prompt. Few drugs relieve the dyspnea which occurs in many pulmonary lesions. The evidence on which respiratory stimulants are given is at present very scanty, and there is comparatively little proof to indicate that they are at all efficacious. On the other hand, the proper use of oxygen and carbon dioxid is of the greatest importance. In all acute cases which show any degree of cyanosis, oxygen should be administered promptly and in sufficient quantity. The use of the so-called funnel method is condemned, as the quantity of oxygen allowed to pass through the funnel is usually ludicrously inadequate, and there is evidence to prove that it does not enrich the inspired air. On the other hand, the use of properly fitting masks and the regulation of the amount of oxygen, or the use of a nasal catheter with a similar control, gives good results. Meakin deplores the fact that sufficient attention has not been given to the therapeutic use of carbon dioxid. In many cases a pronounced decrease in the carbon dioxid content of the arterial blood and of the tissues occurs. In such instances the administration of carbon dioxid after a proper manner would most probably have very beneficial results.

Kahn Test for Syphilis.—Osmond and McClean compared the Kahn test with the Wassermann test in a series of 500 serums taken at random from cases of treated and untreated syphilis and nonsyphilitic cases. There was complete agreement in 389 cases, and some disagreement in 111.

Cause of Failure of Tonsillectomy.—Incomplete removal of these structures is the cause of failure discussed by Wharry. He says that in adenoid disease the maxim should be to remove the adenoids, all the adenoids and nothing but the adenoids; and in the case of the tonsils to take out the tonsil, the whole tonsil and nothing but the tonsil. In the latter case it is also necessary to arrest all bleeding at the earliest possible moment by means of pressure forceps and ligature, and to perform the operation in a buccal cavity free from all sepsis but that of the tonsil itself.

Indian Journal of Medical Research, Calcutta

11: 669-970 (Jan.) 1924

*Bovine Tuberculosis in India. W. G. Liston and M. B. Soparkar.—p. 671.
*Id. Investigation into Types of Tubercle Bacilli Isolated from Animals During Outbreak of Tuberculosis. M. B. Soparkar.—p. 681.
Influence of Hydrogen Ion Concentration on Dose of Alum and Mechanism of Action of Alum in Clarification of Natural Waters. N. L. Banerji.—p. 695.
Reaction of Blood in Kala-Azar. L. E. Napier.—p. 719.
Preparation of N. N. N. Mediums of Different Hydrogen Ion Concentrations. L. E. Napier.—p. 733.
*Flagellate Protozoon Found in Saliva. R. Knowles and B. M. Das Gupta.—p. 737.
Reliability of Posttreatment Diagnoses of Helminth Infections. K. S. Mhaskar.—p. 743.
*Pathogenesis of Deficiency Disease. XV. Effect of Asphyxia on Action of Epinephrin. XVI. Effect of Carbon Dioxid on Action of Epinephrin. R. McCarrison.—p. 749.
Occurrence of Malaria in Hill Station. H. E. Shortt.—p. 771.
Epidemic of Relapsing Fever. A. J. H. Russell, A. Ayyar and Unhaya.—p. 791.
Indian Species of Genus Phlebotomus. III. Provisional Diagnostic Table of Males of Species and Varieties Recorded from India and Ceylon. J. A. Sinton.—p. 807.
Id. IV. Phlebotomus Himalyensis Annandale. J. A. Sinton.—p. 817.
*Cultivation of Parasite of Indian Relapsing Fever. J. A. Sinton.—p. 825.
Chemotherapy of Antimonial Compounds in Kala-Azar. VIII. Quantitative Studies in Excretion of Antimony. U. N. Brahmacharia and others.—p. 829.
Changes Caused by Bacillus Typhosus in Reaction of Mediums. J. W. Cornwall.—p. 839.
Revision of Culicene Mosquitoes in India. VIII. Indian Species of Finlaya Theo. P. J. Barraud.—p. 845.
Factors Concerned in Neufeld's Bile Solubility Test. R. H. Malone.—p. 867.
Degree of Bile Solubility as Means of Differentiating Pathogenic from Nonpathogenic Capsulated Diplococci. R. H. Malone.—p. 877.
*Mechanism of Infection by Bacillus Typhosus. J. W. Cornwall and H. M. LaFrenais.—p. 883.
Pathology of Dracontiasis. N. H. Fairley and W. G. Liston.—p. 915.
New Cercaria from Northern India. M. B. Soparkar.—p. 933.
Dysentery Carriers Among Hill Villages. H. Rai.—p. 943.
*Types of Pneumococcus in Punjab and Northwest Frontier Province of India. R. H. Malone.—p. 947.
Hookworm Infection in the Soil. K. S. Mhaskar.—p. 951.
Occurrence of Hypoderma Lineatum Villiers in Punjab; Second Stage Larva of Hypoderma Crossi Patton. Gasterophilus Crossi Sp. Nov. Parasitic in Larval Stage in Stomach of Horse. W. S. Patton.—p. 961.
*Infection of Mouse by Bed-Bugs Fed on Peripheral Blood of Case of Kala-Azar. H. E. Shortt and C. S. Swaminath.—p. 965.
New Mosquito (Finlaya Sintoni) from Kashmir. P. J. Barraud.—p. 967.

Bovine Tuberculosis in India.—Apparently few cases of bovine tuberculosis have been found in India; therefore an outbreak of tuberculosis among animals in the Bombay Zoo was of great interest. The outbreak was at first confined to animals kept in two enclosures adjoining each other, one of which contained llamas and the other spotted deer. Careful investigation disclosed that the disease was brought in by two llamas purchased outside of India and that it spread from one animal to another.

Types of Tubercle Bacilli Isolated from Animals.—The types of tubercle bacilli obtained from the animals that became infected with tuberculosis in the Bombay Zoo were studied by Soparkar. Nine viruses were obtained from the following animals: spotted deer, binturong, llama, antelope and gazelle. Tubercle bacilli obtained from the binturong were avirulent and could not be distinguished from tubercle bacilli of the "human" type. Those obtained from four spotted deer and a gazelle resembled tubercle bacilli of the "bovine" type. Tubercle bacilli isolated from an antelope possessed the cultural characters of the bovine bacillus but it was less virulent. Tubercle bacilli isolated from one spotted deer and a llama were markedly dysgonic in their cultural characters but possessed a low virulence.

Flagellate Protozoon in Sputum.—In examining the sputum of a case of splenomedullary leukemia, Knowles and Das Gupta saw a flagellate protozoon in Leishman stained slides. When fresh material was examined by dark ground illumination, the organism was found in considerable numbers and showed a jerky Bodo-like type of movement. The patient's collected saliva, free from sputum, was examined the next day and the third day, and each time the organism was found. At later examinations of both saliva and sputum no flagellates were seen. Thus the organism was clearly present in the mouth only as a transient and obviously nonpathogenic commensal. It had no connection with the disease.

Effect of Asphyxia on Action of Epinephrin.—Cannon and others state that there is an increased output of epinephrin from the suprarenals during asphyxia; Stewart and his co-workers state that asphyxia favors the action of epinephrin so that its effects are produced without change in the amount of epinephrin in the blood. McCarrison's observations provide evidence in favor of both views—the problem appearing to be largely one of the stage of asphyxiation at which the observations were made.

Cultivating Spirochete of Relapsing Fever.—The medium used by Sinton to cultivate the spirochete of relapsing fever was hydrocele fluid, to every 100 c.c. of which had been added 1.5 c.c. of a 50 per cent. glucose solution, in one case, and horse serum to which the same proportion of glucose solution had been added in a second case.

Immunity Against Bacillus Typhosus.—Cornwall and La Frenaise stress these points: Immunity against typhoid in man depends (1) on the ability of the endoderm to prevent the passage of the bacilli through it; (2) on the ability of the cells of the mesoderm to withstand the noxious effect of toxin liberated in it by the death of the bacilli which have penetrated the endoderm. Prophylactic treatment, therefore, should have a double aim in view.

Types of Pneumococci in India.—One hundred and six strains of pneumococci obtained from the sputum of pneumonia patients or from blood cultures were typed by Malone with the following results: Type I, 28.3 per cent.; Type II, 17 per cent.; Type III, 7.5 per cent., and Type IV, 47.2 per cent.

Bedbugs and Kala-Azar.—Experiments to infect man or experimental animals by the bite of bedbugs fed on kala-azar patients have been unsuccessful. It occurred to Shortt and Swaminath that these bugs might be infective otherwise than by biting. Therefore bedbugs (*Cimex hemiptera*) were fed on blood from cases of kala-azar which showed parasites in the peripheral blood. These bugs were dissected after a lapse of nine days and the dissected intestines, emulsified in saline solution, were injected intraperitoneally into mice. Of five mice used the spleen from only one gave a growth of *Herpetomonas donovani.*

Journal of Obstetrics and Gynæcology of British Empire, Manchester

31: 1-164 (Spring Number) 1924

*Treatment of Carcinoma of Uterine Cervix at "Radiumhemmet," Stockholm. H. V. J. Heyman.—p. 1.
*Toxemias of Pregnancy; Liver Function in Relation to Induction of Premature Labor. C. Berkeley, E. C. Dodds and A. L. Walker.—p. 20.
*Should Supravaginal Hysterectomy Be Discarded? W. F. Shaw.—p. 41.
Urinary Incontinence in Women; Operative Treatment in Young Nulliparae. D. Dougal.—p. 46.
Sterilizing Gloves Without Heat. G. W. Theobald and J. W. Bigger.—p. 54.
Case of Secondary Abdominal Pregnancy. J. B. Hellier.—p. 66.
Modified Gilliam's Operation for Shortening Round Ligaments. J. C. H. Leicester.—p. 68.
Tubo-Ovarian Abscess Containing Living Ascaris Lumbricoides. J. P. Maxwell.—p. 70.
Red Degeneration of a Fibroid Complicating Pregnancy; Myomectomy; Recovery Without Interruption of Pregnancy. B. K. T. Collins.—p. 73.
Portable Operating Table for Obstetric Cases. H. Tvedegaard.—p. 75.

Radium Therapy for Carcinoma of Cervix.—Heyman's report comprises 505 cases of primarily radium-treated carcinoma of the cervix that were treated at "Radiumhemmet" in Stockholm within the period from 1914 to 1921, inclusive. Of the operable or borderline cases treated from 1914 to 1918, 40.5 per cent. were free from symptoms after five years. Of the inoperable cases treated from 1914 to 1918, 16.6 per cent. were free from symptoms after five years. Of the remainder, from 20 to 25 per cent., varying with the year, were free from symptoms after three years.

Toxemias of Pregnancy and Liver Function Test.—Examination of the pigmentary function of the liver was found by Berkeley, Dodds and Walker to give the most constant and reliable results as a test of liver function. Throughout their work they employed, in addition to the familiar tests, very delicate reactions for bile pigments and their precursors, urobilin and urobilinogen. They also employed Fouchet's test for the bile pigment in blood, and were able to confirm his statements completely, finding the test positive up to a dilution of 1 in 60,000. The best indication, and perhaps the only safe one, for inducing premature labor in cases of albuminuria of pregnancy was found to be the pigment function test.

Supravaginal Hysterectomy.—In spite of the fact that he has recently seen three cases of cancer of the cervix following supravaginal hysterectomy, Shaw still is of the opinion that there is a distinct place for this operation. He would perform it in nulliparous uteri and in multiparous uteri in which there is no damage to the cervix, but would perform the complete operation more frequently than previously and always when there is any tear in the cervix or chronic cervicitis.

Lancet, London

1: 687-734 (April 5) 1924

*Wasting Disorders of Early Infancy. L. G. Parsons.—p. 687.
*Pancreas and Diabetic Metabolism. H. Oertel.—p. 695.
Outbreak of Typhus Fever in England. D. M. Mathieson and H. M. Leete.—p. 697.
Hysterical Bilateral Ptosis and Convergence Excess. S. Lodge and W. O. Lodge.—p. 699.
Medical Treatment of Cataract. I. Taylor.—p. 700.
"Hair Ball" in Stomach of Ten Year Old Girl. G. M. A. Herzfeld.—p. 701.
Case of Persistent Priapism. H. Porter and R. H. J. Swan.—p. 702.

Wasting Disorders of Early Infancy.—The clinical picture of the cases discussed by Parsons is that of a wasted infant whose age can be measured in weeks rather than in months, and whose history is that, although normal at birth, the baby has failed to put on weight normally; it has wasted, and probably has suffered from vomiting, and in many cases also from constipation or diarrhea. The cases are labeled simple atrophy or marasmus, and infantile pyloric stenosis. The literature is reviewed, likewise the work of Czerny and of Finkelstein, as well as recent work in Britain and America. The author's classification of these cases differs somewhat from that of others: (1) simple atrophy; (2) simple atrophy with dyspepsia: (*a*) diarrhea and vomiting; (*b*) fat indigestion; (*c*) carbohydrate indigestion; (*d*) protein indigestion; (*e*) pylorospasm; (3) simple atrophy from deprivation (avitamoses): (*a*) absence of fat (dystrophia alipogenetica), frequently also associated with excess of carbohydrate (dystrophia amylogenetica) and often insufficient protein; (*b*) absence of antiscorbutic and antineuritic vitamins. (4) Atrophy associated with other diseases or infections, pyloric stenosis and other deformities. The metabolism of fats in infantile atrophy and fat indigestion is also discussed.

Pancreas and Diabetic Metabolism.—The prevalent belief that insulin is a secretion of the islands of Langerhans, and that it furnishes something which "aids in the burning of the blood sugar," is refuted by Oertel. He asserts that the islands are not wholly independent structures which are simply carried by, and imbedded in, the pancreas. The islands are embryologically derived from the same cell elements as the rest of the parenchyma, and they are particularly abundant in the embryonic and evolving pancreas. The islands appear, therefore, as a phase in the constant morphologic fluidity of the pancreas, and consequently are an important feature of normal and pathologic life of the organ. With regard to the older pathologic evidence of island changes in diabetes, which were at one time highly regarded as indicating their independent functional position, Oertel believes that sufficient evidence has accumulated to throw considerable doubt on such changes in relation to diabetes. Hyaline changes, very similar to those occurring in diabetes have been observed in nondiabetics, especially older persons or cachectics. The evidence presented by Oertel, in his opinion, indicates that the independent anatomic and functional position of the islands is not established beyond doubt, but on the contrary, rests on an uncertain basis. The whole pancreas is in constant regression and progression; it resembles in this respect other important organs notably of internal secretion. While normally these two groups of processes—the regressive and the progressive—proceed side by side in orderly physiological balance, they may become upset and, by exaggeration or inhibition of one or the other, lead to pathologic states. In this manner develops, in Oertel's opinion, the essential atrophy of the pancreas which is more commonly found in severe diabetes of the young than the cirrhotic (inflammatory) atrophy. He is convinced that sufficient evidence has been produced to show that there is at present still a reasonable uncertainty in the exact mechanism of the relationship of the pancreas to sugar metabolism. He believes that there exists enough morphologic as well as experimental evidence to question the independence of the islands and the conception of them as organs of internal secretion which are essential for the combustion of sugar.

Bulletin de l'Académie de Médecine, Paris

91: 417-438 (April 1) 1924

The Fight Against Tuberculosis in the Seine District. F. Bezançon and L. Bernard.—p. 421.
*Birth Rate and Death Rate in France Since 1806. A. Calmette.—p. 430.
*Acidity of Urine. M. P. Weil et al.—p. 433.
Fowl Typhoid and Salmonellosis. Truche.—p. 435.

The Birth Rate and the Death Rate of France.—Summarized in Paris Letter, p. 1561.

Acidity of the Urine.—Weil estimates the hydrogen ion concentration by colorimetry. The indicator is a mixture of methyl red and bromothymol blue.

Bulletin de l'Académie Royale de Médecine, Brussels

4: 55-109 (Feb. 23) 1924

*Research on the Vagus. Henrijean and Waucomont.—p. 60.
Standardization of Arsphenamin. De Myttenaere.—p. 65.
Surface Tension of the Plasma. Zunz and J. La Barre.—p. 74.

Vagus Studies.—Henrijean and Waucomont report their experiments on dogs which prove that when paralysis (electric) of the vagus has been induced by heart stimulants, it may be arrested by intravenous injection of small doses of potassium chlorid. This is not the case with paralysis of the pneumogastric induced by atropin. The former is reversible; the latter is not.

Bulletin Médical, Paris

38: 369-396 (April 5) 1924

*The Waves of Aggravation in the Evolution of Tabes. C. Foix and H. Lagrange.—p. 375.
Camphor in Therapeutics. E. Desesquelle.—p. 377.

Waves of Aggravation in Course of Tabes.—Foix and Lagrange call attention to the fact that locomotor ataxia can develop in periods of aggravation after relative remissions or long stationary phases. In such stationary cases, they declare, the assumption that the only dangers to be forestalled are complications such as arthropathy and fracture is not justifiable.

Bulletins de la Société Médicale des Hôpitaux, Paris

48: 383-468 (March 28) 1924

Amaurosis. Lévy-Valensi.—p. 383.
Toxic Optic Neuritis or Simulation? E. Rist.—p. 384.
Adenitis in Gangrenous Appendicitis. Oudard.—p. 386.
The Value of the Wassermann Reaction. M. Renaud.—p. 389.
*Familial Amebiasis. A. Panayotatou.—p. 405.
Treatment of Pulmonary Gangrene. G. Caussade et al.—p. 410.
Mitral Stenosis with Endocrine Upset. Pasteur Vallery-Radot and P. Blamoutier.—p. 425.
Syphilitic Osteitis of the Skull. A. Léri and P. Cottenot.—p. 432.
Transfusion of Blood in Typhoid Hemorrhage. E. de Massary et al.—p. 436.
Colon Bacillus Sepsis in Pregnancy. A. Lemierre and E. Rivalier.—p. 439.
Bismuth in Cerebrospinal Fluid. Sézary et al.—p. 443.
Meningococcus Plus Tubercle Bacilli Meningitis. C. Achard et al.—p. 446.
The Meltzer-Lyon Bile Test. M. Chiray and M. Milochevitch.—p. 449.
Tuberculous Polyneuritis. O. Crouzon et al.—p. 464.

Familial Amebiasis.—Panayotatou reports the case of an indigent refugee from Smyrna in Egypt who developed a bronchial amebiasis, while his small daughter displayed the classical symptoms of intestinal amebiasis. The man lost flesh, felt weak, and amebas could be isolated from his sputum. Tartar emetic injections in daily doses of from 0.065 to 0.08 gm. proved beneficial. It must be accepted that amebiasis may appear in different sites of the organism and that the individual soil, not yet adapted to a new and infested environment, predisposes to infection.

Comptes Rendus de la Société de Biologie, Paris

90: 725-828 (March 28) 1924. Partial Index

Death of Jacques Loeb. G. Bohn.—p. 728.
Glycerol in Tubercle Bacilli Cultures. Frouin and Guillaumie.—p. 731.
Culture of Tubercle Bacilli. Gessard and Vaudremer.—p. 732.
Temperature and Metabolism in Brazilian Tatu. A. Ozorio de Almeida and Branca de A. Fialho.—p. 734.
Granular Structure of Elastic Fibers. M. de Kervily.—p. 736.
*Potential Characters in Fowls. A. Pézard et al.—p. 737.
*Action of Serum from Fasting Animals. Carnot and Terris.—p. 739.
Theory of Complement Fixation. M. Renaud.—p. 741.
Hydremia in Hypertension. P.-L. Violle and M. Armand.—p. 742.
Epizootic Lymphangitis. J. Barotte et al.—p. 744.
Intradermal Vaccination Against Anthrax. H. Velu.—p. 746.
Irreversibility of Evolution. D. Keilin.—p. 747.
*Automatic Training. C. Bussard.—p. 749.
*Pulmonary Infection with Anthrax. D. Combiesco.—p. 752.
Enrichment of Stools for Ova. Sigalas and Pirot.—p. 755.
Diagnosis of Myeloplaxoma. J. Sabrazès and H. Bonnin.—p. 757.
Limits of Abdominal Aorta. F. Villemin and P. Huard.—p. 759.
Cardiographic Sign of Double Second Sound. Pachon and Fabre.—p. 761.
*Etiology of Measles. F. Arloing and A. Dufourt.—p. 763.
Diagnosis of Meningococcus. Fontanel and Le Bourdelles.—p. 766.
Gonococcus Culture Mediums. F. Leboeuf.—p. 768.
*Preparation of Collodion Sacs. Lumière and Chevrotier.—p. 769.
Diagnosis of Streptococcus Group. A. Rochaix.—p. 771.
Structure of Choroid Plexus. R. Noel and H. Accoyer.—p. 772.
*Ciliated Cells in Rabbit Vagina. T. Zong-Yung.—p. 775.
*Antagonistic Action of Various Roentgen Rays. A. Dognon.—p. 778.
*Diuresis and Uric Acid. L. Ambard and M. Wolf.—p. 784.
*Elimination of Uric Acid. L. Ambard and M. Wolf.—p. 786.
*Insulin and Metabolism. Arnovlyévitch and Schmidt.—p. 788.
*Dual Nature of Insulin. L. Ambard et al.—p. 790.
Sex Glands and Secondary Characters in Frogs. M. Aron.—p. 797.
Roentgen Irradiation of Testes of Roosters. J. Benoit.—p. 802.
Epididymis After Castration. J. Benoit.—p. 806.
*Vaginal Rhythm of Hedge-Hog. R. Courrier.—p. 808.
Hemoculture in Solid Mediums. L. Boëz.—p. 809.
Trophic Sugar Regulatory Reflexes. A. Pi Suñer.—p. 813.
*Afferent Innervation of Stomach. A. Pi Suñer and Puche.—p. 814.
Cultivation of Micrococcus Melitensis. P. Domingo.—p. 819.
Pathways of Glycemia Reflexes. A. Pi Suñer.—p. 821.
Agglutination of Micrococcus Melitensis. P. Domingo.—p. 824.
Insulin in Menstrual Disturbances in a Diabetic. Formiguera.—p. 826.
Reaction of Urine from Denervated Kidney. Bellido and Puche.—p. 827.

Potential Characters in Fowls.—Pézard, Sand and Caridroit demonstrate that in the study of heredity it is necessary to attempt to produce potential characters instead of limiting ourselves to the apparent qualities. Their experiments on ovariectomized hens indicate such possibilities.

Action of Serum from Fasting Animals.—When undernourished rabbits had lost about 20 per cent. in weight, Carnot and Terris injected their serum, liver emulsions and extracts from it into new animals. All of them lost in weight. Control animals injected with extracts from muscles showed no disturbances.

Automatic Training.—Bussard describes an electric apparatus for the study of psychic reactions of rats.

Cutaneous Infection and Immunity.—Combiesco made experiments on the difference of results with different methods of vaccination. When he injected typhoid and other bacilli after incubating them with oxalated blood of normal rabbits, the injected animals were protected against infection, although they had no antibodies, or very small amounts, in their serum. He believes that a similar immunity produced by the application of germs on the skin is due to their contact with tissue fluid before penetration into the organism.

Etiology of Measles.—Arloing and Dufourt cultivated from the blood in eight cases of measles the gram-negative micrococci described by Caronia and Sindoni. In the discussion that followed their report, A. Lumière pointed out that the question is far from being settled. Control cultures from healthy persons are lacking, though Portier has shown the possibility of presence of saprophytes in the tissues of apparently healthy animals. The alleged cocci may be simply flocculated colloids. Fever and eruption may be produced by injecting the medium alone.

Preparation of Collodion Sacs.—Lumière and Chevrotier mix one part of glucose syrup with two parts of confectioner's sugar. This paste may be shaped in any desired form and used as a mold to cover with collodion. The sugar dissolves out in a few hours in water, leaving the collodion sac intact and ready.

Ciliated Cells in Rabbit Vagina.—Zong-Yung studied the vaginal epithelium in rabbits which had had no intercourse during heat. He observed a transitory phase of ciliated cells containing vacuoles with vibratory lining.

Antagonistic Action of Various Roentgen Rays.—Dognon irradiated a colloidal solution of mastic with roentgen rays of different wave lengths. Although each radiation accelerated the flocculation, when used alone, the mixture of them had little or no action.

Diuresis and Uric Acid.—Ambard and Wolf found that the excretion of uric acid does not increase in any amount comparable to the urea excretion when the diuresis is great. The elimination of uric acid and purin bases in two patients with diabetes insipidus was normal.

Elimination of Uric Acid.—Ambard and Wolf point to the difficulty of considering uric acid as a substance with or without a threshold. They believe that it cannot pass into the urine except when some other substance, the nature of which is not known, is excreted. Phenylcinchoninic acid and all the agents which increase the nitrogen metabolism (HCl, sensation of hunger) increase the elimination of uric acid.

Insulin, Hyperglycemia and Metabolism.—Arnovlyévitch and Schmidt confirmed in rabbits anesthetized with chloralose the results they had obtained previously together with Ambard: both insulin and hyperglycemia increase the oxidations. The effect is not very marked because insulin lowers the glycemia and hyperglycemia reduces insulin production.

Dual Nature of Insulin.—Ambard, Schmidt and Arnovlyévitch believe that there are two insulins: one of them enhances the transformation of glucose into glycogen, and the other increases the decomposition of sugar into carbon dioxid and water. Polymerization and decomposition of glucose are divergent processes. If they were merely antagonistic, a reversible action of one hormone might explain it.

Vaginal Rhythm of Hedge-Hog.—Courrier injected the fluid from graafian follicles in hibernating hedge-hogs. This induced vaginal changes resembling those in heat. The follicular substance is soluble in alcohol and comparatively thermoresistant.

Afferent Innervation of Stomach.—Pi Suñer and Puche investigated the centripetal innervation of the stomach of dogs in chloralose anesthesia. Electric stimulation gave no results. Compression and especially dilatation of the stomach was very effective. Changes of respiration and blood pressure served as indicators of the sensitivity. Simultaneous section of the pneumogastric and splanchnic nerves prevented the reflexes. If the pneumogastric nerves alone are severed, the reflexes are increased.

Gynécologie et Obstétrique, Paris

9: 173-252 (Feb.) 1924

*Bladder Disturbance from Uterine Fibromas. Hartmann and Bonnet. —p. 173.
*Premature Emergency Cesarean Section. J. Caraven.—p. 184.
Calculi of the Fallopian Tube. J. Regnault.—p. 191.
Treatment of Genital Prolapse. H. Hartmann.—p. 194.

Bladder Disturbances from Uterine Fibromas.—Hartmann and Bonnet studied, in 1,000 cases, the bearing of fibromas on the function of the bladder. Orthostatic pollakiuria, cystitis, hematuria and retention of urine have been occasionally observed, this latter in thirty-five of the 1,000 cases. It is a rather peculiar fact that it is not the fibromas located on the anterior wall of the uterus which cause most of the trouble, but those of the posterior wall.

Premature Cesarean Section.—Caraven reports a rare case of uterus bicornis. The young healthy mother wanted to have a living child, but a few days after the seventh month of the pregnancy a serious hemorrhage developed, due to premature detachment of the placenta. Since intervention was urgent, regular cesarean section was performed. Both mother and child were saved and left the hospital twenty days after the operation. The child, after having passed through a period of gastro-intestinal derangement, is now thriving well.

Paris Médical

285-300 (March 29) 1924

Ophthalmic Herpes Zoster. C. Achard.—p. 285.
*Urine of Polyuria Crisis. Carnot and Rathery.—p. 291.
Social Importance of Psychopediatrics. A. Collin.—p. 294.
*Treatment of General Paralysis. Gaehlinger.—p. 298.
Volkmann's Ischemic Contracture. M. De Treigny.—p. 300.
Bile Treatment of Intestinal Paralysis. Blamoutier.—p. 300.
Calcium Content of the Blood. P. Blamoutier.—p. 300.

Diuretic Effect of Crisis Urine.—Carnot and Rathery found that about 100 c.c. of urine from a patient with catarrhal jaundice during a crisis of polyuria caused marked polyuria in otherwise normal animals.

Progress in Treatment of General Paralysis.—Gaehlinger reviews the main lines of modern endeavors to influence general paralysis. The most interesting are the malaria therapy, which is endorsed by many neurologists, and recent experiments with decompressive craniotomy to permanently relieve the brain from fluid hypertension. A few cases have been reported as benefited by the decompression operation.

301-332 (April 5) 1924

*Pathology of the Digestive System. Carnot and Gaehlinger.—p. 301.
The Diet for Emaciated Dyspeptics. J. C. Roux.—p. 314.
Evening Reclining in Treatment of Visceroptosis. Carnot.—p. 322.
Milk Diet in Enteritis. R. Goiffon.—p. 326.
Asthenia Following Defecation in Constipation from Ptosis. J. Matignon. —p. 332.

Pathology of the Digestive System in 1924.—In this review on recent developments in gastro-intestinal therapy, Carnot and Gaehlinger discuss anachlorhydria in its relation to pernicious anemia, gastric infection, infected ulcers and the effect of the infection on the micro-organisms proliferating on account of the pyloric stenosis. The question of nervous gastric crises from the solar plexus, as held by Laignel Lavastine, seems to be in a too primitive stage as yet to justify surgical operation in tabes on this basis. Attention is called to diurnal oliguria as well as to nycturia, occurring with pyloric stenosis. Some Scandinavian surgeons are disinclined to treat ulcer surgically. With medical treatment they claim 60 per cent. of cures in cases of less than a year's standing, but only 20 per cent. for three or five year ulcers. Interest has turned toward combating hyperchlorhydria and vagotony. Holler introduced in 1921 a neurotropic protein therapy with a "vaccineurin" made of an autolysate from *Bacillus prodigiosus* and staphylococci. Recently a flourishing literature has developed on parenteral protein therapy, and several reports have recorded at least the prompt disappearance of pains, even when signs of objective improvement could not be detected. They emphasize, however, that in spite of some premature claims, we still do not know when the ulcer starts nor when it can be considered as certainly cured. They say that the duodenal tube may yet prove as important for the study of digestive disturbances as auscultation for heart and lung disease. The duodenal tube reveals microscopic and chemical information which cannot be obtained by other means, for instance, the knowledge about *Lamblia intestinalis* as an indicator of a pathologic process. They summarize further recent works on intestinal stasis and ptosis and their treatment.

333-348 (April 12) 1924

Treatment of Acute Appendicitis. E. Bressot.—p. 333.
*True Neurasthenia in Tuberculosis. A. Tardieu.—p. 338.
*Treatment of Hypertrophied Prostate. C. Guilbert.—p. 343.

Neurasthenia and Tuberculosis.—Tardieu reports a case of true neurasthenia which was a manifestation of the toxic action of diffuse tuberculosis in the period of allergy. There were no signs of constitutional neurasthenia and the morbid depression of mind and body was evidently secondary to the diffuse infection. The patient was a trained nurse, aged 29. The first symptoms had been from ptosis of the stomach and right kidney. Under psychotherapy and general hygiene the neurasthenia has been conquered.

Roentgen-Ray Treatment of Hypertrophied Prostate.—In two cases described, out of a much larger experience, an emergency cystostomy could not be followed by prostatectomy on account of the bad general condition. Under deep roentgenotherapy, a single, six-field exposure, by the belt method, the prostate subsided to normal size in a month or two, and all disturbances from the prostate disappeared permanently. There has been no recurrence during the six months and one year to date. The shrinking of the tumor could be inspected from time to time through the fistula into the bladder. Guilbert used from 95 to 110 per cent. of the skin dose in one massive dose, rather than fractioned and repeated doses, and comments on the comparatively slight reaction. He denounces application of the rays by way of the perineum, for reasons which he enumerates, and declares that the single large dose is harmless even for the aged. Two of his patients were 84 and 88 years old.

Presse Médicale, Paris

32: 277-288 (March 29) 1924

Pathogenesis of Hemorrhagic Purpura. M. R. Castex.—p. 277.
Hour-Glass Stomach from Ulcer. Le Noir and Bariéty.—p. 280.
*Neuropsychiatry in Pediatrics. J. Roubinovitch et al.—p. 281.

Neuropsychiatry in Treatment of Children.—Roubinovitch, Baruk and Bariéty, after having reviewed the main etiologic forms of nervous and mental disturbances in children, state that treatment must be threefold: specific, organotherapeutic and educational. Good results have been reported from treating syphilitic women during their pregnancy, warding off congenital syphilis in the offspring. Among different forms of organotherapy, thyroid treatment has proved relatively most efficient, not only in endocrine disturbances but for arrested development in various ways. Many cases of secondary loss of balance and maladjustment are due merely to neglect in the puberty period. A vigorously organized movement for mental hygiene bearing on education may be the only means to prevent the development of morbid tendencies in adolescence and early adult life.

32: 289-296 (April 2) 1924

Sodium Borate in Treatment of the Stomach. M. Loeper and R. Turpin.—p. 289.
*Epileptic Seizures. L. Marchand.—p. 290.
*The Roentgen Malaise. P. Lignac and A. Devois.—p. 292.

Epileptic Seizures with Retained Consciousness.—Marchand explains that there are classical convulsive forms of epilepsy in which a strange type of consciousness is retained. The patient is aware of everything going on in his environment, but beholds himself reacting like a machine unable to control his movements. One woman gave an intelligent introspective description of her sensations. She suddenly felt the seizure coming on and continued her previous work without interruption. She then observed that she could not think properly, and that she automatically repeated the same phases of her work. She considered this very peculiar, which proves that she retained her self-criticizing judgment. Study of such cases will unravel many difficulties concerning the somewhat neglected field of epileptic amnesias.

Acute Roentgen-Ray Intoxication.—Lignac and Devois believe that there is satisfactory evidence for believing that one of the main causes of the *roentgenkater* is a hypervagotony due to a temporary dysfunction of the suprarenals. Patients regularly treated with endocrine products did not display troublesome symptoms, such as nausea. In the causation of acute roentgen malaise the development of ozone and the resorption of dead tissue cells have probably only an infinitesimal, negligible rôle.

32: 297-308 (April 5) 1924

*Quinidin in Arrhythmias. C. Lian.—p. 297.
*Glaucoma and Endocrine Disturbances. H. Lagrange.—p. 300.

Quinidin Sulphate in Arrhythmias.—Lian reports thirty-seven cases of total arrhythmia in which he treated with quinidin sulphate, with complete recovery of sixteen of the patients. He states further that it is proving effectual in paroxysmal tachycardia. He gives the drug in the form of 2 or 3 tablets, each of 0.20 gm., keeping this up the first ten days of each fortnight for several months. This not only influences favorably the attacks, but also reduces the liability to further attacks.

Glaucoma and Endocrine Disturbances.—Lagrange reports a case in which a young woman suffered from attacks of glaucoma and displayed, in the intervals, several symptoms suggestive of endocrine disturbances. She improved after corpus luteum therapy. Experimental parenteral injections of distilled water caused in rabbits ocular hypertonia due probably to a colloidoclastic change in the tissue fluids in general and in the aqueous humor in particular. This condition is closely akin to urticaria, asthma, Raynaud's disease and spasmodic coryza. It seems that these conditions are connected with a temporary upset in the balance of the pneumogastric and sympathetic regulation.

32: 309-320 (April 9) 1924

Study of 328 Cases of Typhoid. Courtois-Suffit et al.—p. 309.
*Bismuth in Treatment of Syphilis. Hudelo and Rabut.—p. 313.
The Orthopedic Problem in Resection of the Knee. J. Calvé and M. Galland.—p. 315.

Bismuth in Syphilis.—Hudelo and Rabut warn that the teeth should be cleaned before beginning a course of bismuth. If there are carious teeth, it is better to refrain from this drug, as also when the liver is functionally deficient or the general health is bad. The appearance of considerable albumin calls for suspension of the bismuth. With preexisting albuminuria, the soluble salts should be preferred. The intravenous route is less active and predisposes to immediate reactions—a double reason for abandoning it, they say. A general depression, from slight fatigue to actual asthenia, with pallor and loss of weight, is sometimes observed, but it is transient. None of the by-effects of bismuth seem to be serious; they are mere incidents, testifying to an occasional slight toxic action from the drug.

Progrès Médical, Paris

205-228 (April 5) 1924

Operative Technics in Gynecology. F. Daels.—p. 205.
Emergency Treatment in Syphilitic Hemiplegia. Sézary.—p. 208.
*Chronic Hallucinatory Psychoses. H. Claude.—p. 209.
Treatment of Acute Infectious Sore Throat. Lereboullet.—p. 212.
Spina Bifida. L. Dubreuil-Chambardel.—p. 217.
Tubo-Ovarian Varicocele. P. Duhail.—p. 219.

Chronic Hallucinatory Psychoses.—Claude suggests that proper differentiation be made between hallucinations of toxic or infectious, and of endogenous origin. In these latter, the hereditary factors and the individual "soil" ought to be given closer consideration than has been the rule heretofore. Although most mental patients are inclined to the exteriorization of the morbid cenesthetic feelings and ideas of personality attached to the former, yet there is a difference in the interpretation by the patients. A paranoiac interprets everything in reference to himself, but in other patients such ideational interpretations may secondarily become associated with primary hallucinatory contents, which fact would conflict with the diagnosis of paranoia.

Revue de Chirurgie, Paris

62: 147-218, 1924

*Fibroglioma of Nose. Rocher and Anglade.—p. 147.
*Pain in Arm After Effort. J. A. Barré and T. Wilhelm.—p. 179.
*Ascending Neuralgia After Trauma. Leriche and Wertheimer.—p. 199.

Fibroglioma of Root of Nose.—In removing the nonfluctuating congenital tumor, the only danger is possible infection of the brain or meninges in case the pedicle has any communication with them. Death occurred from this cause in one of the five personally observed cases, which are compared with five from the records.

Pain and Edema of Arm After Effort.—There had been no direct trauma but a sharp pain was felt in the supraclavicular fossa while lifting a heavy article, and edema developed, both the intense pain and elastic edema persisting for several months. Barré and Wilhelm have encountered two cases of this syndrome. Acute atrophy of the bones was soon manifest, but the whole subsided spontaneously in about a year, leaving merely the arm somewhat weaker than its mate. The pains were diffuse, atrocious and worse at night. By exclusion, they explain the disturbances as the result of rupture of some minute vein or lymphatic in the course of the exertion of lifting the heavy article. In a future case they will abstain from all intervention, as in these two cases, but they might consider injecting an anesthetic at the base of the neck, and if puncture confirms the assumption of effusion of blood or lymph, then pressure from this might be combated. The tendency to spontaneous recovery justifies abstention otherwise.

Ascending Neuralgia of Traumatic Origin.—Leriche remarks that the trauma is generally some insignificant injury of the pulp of a finger, and the extension of toxins explains the ascending neuralgia. He warns that no influence need be expected from periarterial sympathectomy as this acts only on the vessel. The pains may be severe, tenacious and progressive, with paroxysmal exacerbations. As the affection progresses, vasomotor and trophic symptoms appear. The resemblance between this ascending neuralgia and the pains sometimes observed after amputations, suggests that the mechanism is the same, and treatment should be the same, namely, resection of the nerve root. Leriche intends to propose extensive radicotomy in the next case encountered, and the earlier it is done, he says, the better the outlook.

Revue Française d'Endocrinologie, Paris

2: 1-80 (Feb.) 1924

Suprarenal Virilism with Insipidus. A. Chauffard.—p. 1.
*Familial Dysthyroidism. G. Etienne and G. Richard.—p. 5.
Grafts of Testes. C. J. Parhon and M. Kahane.—p. 16.
*Cardiac Infantilism and the Endocrines. G. Bickel et al.—p. 34.

Familial Dysthyroidism.—Etienne and Richard report the history of a patient with an atypical exophthalmic goiter which gradually changed into the clinical picture of myxedema. The family history revealed other cases of disturbances of the thyroid gland.

Cardiac Infantilism and the Endocrines.—Bickel, Frommel and Hess investigated the retarded development of the body in congenital affections of the heart. They found changes in the pituitary, thyroid and suprarenal glands in their case, and believe that this was the cause of the infantilism.

Revue Franç. de Gynécologie et d'Obstét., Paris

19: 161-192 (March 25) 1924

*Twin Pregnancies. G. Cristalli.—p. 161.

Increased Frequency of Twin Pregnancies.—Cristalli has observed a progressive increase in multiple pregnancies in Naples from 1915 to 1921. There were twenty-three twin and one triplet pregnancy in 1915, against 289 twin and five triplet pregnancies in 1921.

Schweizerische medizinische Wochenschrift, Basel

54: 297-316 (March 27) 1924

*Neurology and Diabetes. O. Binswanger.—p. 297.
Familial Congenital Radio-Ulnar Synostosis. M. Lüdin.—p. 300.
Neuroses of Heart. H. Christoffel.—p. 302.

Neurology and Diabetes.—Binswanger believes that glycemia is comparatively independent of the rate of sugar production and disintegration. The nervous regulation plays an important part. Insulin stimulates the parasympathetic system. An insufficient supply of it acts on the metabolism in the liver and on the parasympathetic centers at the base of the brain. He mentions three cases which he considers as evidence of the clinical influence of psychic disturbances on the metabolism of sugar.

Pediatria, Naples

32: 377-440 (April 1) 1924

Vaccine Treatment. A. Ronchi.—p. 377.
*Plasma Proteins in Leishmaniasis. S. Barberi.—p. 399.
*Gelatinization of Serum in Leishmaniasis. A. de Capite.—p. 408.
Cerebral and Spinal Hemorrhage in New-Born Infant. A. Laurinsich.—p. 414.
Outcome of a Bone-Periosteum Implant. N. Caprioli.—p. 418.
Annular Erythema Preceding Sepsis. P. Iacchia.—p. 422.

Plasma Proteins in Leishmaniasis.—Barberi observed a decrease in the concentration of plasma proteins in kala-azar. The increase during treatment was the first sign of improvement, preceding the increase in hemoglobin.

Gelatinization of Serum in Leishmaniasis.—Capite applied the Gaté and Papacostas gel test to the serum of eighteen children with leishmaniasis and many controls. The test is made with 1 c.c. of serum mixed with 2 drops of commercial formaldehyd solution. The gelatinization occurred rapidly in leishmaniasis.

Policlinico, Rome

31: 189-244 (April 1) 1924. Medical Section

Flocculation Reaction. A. Dalla Volta and P. Benedetti.—p. 189.
*Reactivation of the Wassermann Reaction. G. Spremolla.—p. 214.
*Reactions in Scarlet Fever. T. Pontano.—p. 219.
*Besredka's Tuberculosis Reaction. E. Trenti.—p. 229.

Reactivation of the Wassermann Reaction.—Spremolla failed to find any destruction of complement or any anti-complementary property in the serum of dogs and guinea-pigs after injections of neo-arsphenamin. This refutes Felke's theory on the results of provocative arsphenamin injections.

The Wassermann and Sachs-Georgi Reactions in Scarlet Fever.—Pontano applied the Sachs-Georgi and Wassermann tests, with various antigens, in 135 patients with scarlet fever. Only four of them responded positively and these were syphilitics. In all the others the reaction was negative except with some of the aqueous extracts of syphilitic fetal liver (with one of them in 68 per cent. of the patients). Such antigens should be rejected.

Besredka's Tuberculosis Reaction.—Trenti used Besredka's antigen in 100 patients. The positive reaction should be considered only as one of the symptoms of tuberculosis.

Riforma Medica, Naples

40: 265-288 (March 24) 1924

*Action of Ultraviolet Rays. V. M. Palmieri.—p. 265.
*Virulence of Germs in Corpses. G. Fiorito.—p. 270.
Posttyphoid Appendix Cyst. A. Palieri.—p. 273.
Transmission of Scarlet Fever by Milk. M. Gioseffi.—p. 274.

Action of Ultraviolet Rays.—Palmieri irradiated blood from patients suffering from tuberculosis of the skin. Ultraviolet rays caused at first (fifteen minutes) an increase, later (thirty minutes) a decrease of the phagocytic index when the whole blood was treated. The action of the rays was enhanced by the addition of red and yellow rays. Irradiation of the leukocytes alone inhibited phagocytosis.

Virulence of Germs in Corpses.—Fiorito cultivated colon and proteus bacilli from a corpse exhumed two months after death. The germs were more virulent in experiments on guinea-pigs than similar germs obtained from living persons.

Prensa Médica Argentina, Buenos Aires

10: 729-752 (March 20) 1924

*The Syphilitic Placenta. C. Monckeberg and M. Aviles.—p. 729.
*Reflex Spasmodic Movements in Hemiplegia. V. Dimitri.—p. 740.
*Diabetes Insipidus. T. Castellano and M. Schteingart.—p. 743.
Insulin Treatment. P. M. Barlaro.—p. 749. Cont'n.

The Syphilitic Placenta.—Monckeberg and Aviles have been studying 570 microscopic specimens from the syphilitic ova of fifty women, 82 per cent. of whom had signs of active syphilis. The findings confirm what others have published on the syphilitic placenta, especially its friability, so that fragments easily break off and are retained. This complication occurred in 50 per cent. of their cases. The syphilitic changes in the vessels of the placenta, decidua and cord amply explain the death of the fetus, as they shut off the supply of blood to the fetus and induce thrombosis, etc. Monckeberg and Aviles never found spirochetes in the placenta, but 30 per cent. of the fetuses had spirochetes in the liver. Twenty-one photomicrographs are reproduced, showing the arteritis and phlebitis in various parts of the ovum.

Motor Spasms in Hemiplegia.—The left hemiplegia was from cerebral hemorrhage, and the convulsive movements were of the reflex defense type. They could be elicited by the slightest touch to the skin to the left of the median line. The pain accompanying the hemiplegia and the diminished objective sensibility (tactile, thermic, etc.) in addition to the reflex hyperkinesia distinguish the case further.

Diabetes Insipidus.—In the two typical cases reported, the Wassermann reaction was negative, but clinical recovery followed treatment as for syphilis. The cerebrospinal fluid showed slight changes suggestive of neurosyphilis.

Archiv für Kinderheilkunde, Stuttgart

74: 81-240 (April 5) 1924

*So-Called Pylorospasm in Infants. N. P. Balan.—p. 81.
*"Dynamic Protein Fever." F. Goebel.—p. 98.
*Bismuth in Congenital Syphilis. M. Frank.—p. 106.
Dysentery in Infants and Children. J. Müller.—p. 115.
*The Eyelid Reflexes. J. S. Galant.—p. 130.
Alleged Soluble Camphor Preparation. R. Kiefer.—p. 135.
*Prognosis of Tuberculosis in Children. K. Gulden and E. Lüders.—p. 143.
Hypergenitalism from Suprarenal Tumor. F. Sachs.—p. 151.
Probable Error with Schilling's Hemogram. G. Ockel.—p. 158.
*Fate of Syphilitic Children. G. Meyer.—p. 172.
Mediastinal Abscess in Three Weeks' Infant. S. Achenbach.—p. 188.
*Prognosis in Tuberculosis in Infants. C. Hahlo.—p. 193.

Pylorospasm in Infants.—Balan reproduces the microscopic findings in seven cases of so-called pylorospasm in infants. He was surprised to find that the spasm included the whole of the pylorus canal except the actual pylorus ring itself. Both musculature and elastic tissue were much hypertrophied, and the hypertrophy increased with the duration of the spasm.

This indicates that the hypertrophy is the consequence, not the cause, of the spasm. Changes in the mucosa in the pylorus region seemed to be responsible for the reflex spasm in a few cases; in the others, nothing but the innervation could be incriminated.

"Dynamic Protein Fever."—Goebel did not succeed in demonstrating passage of casein or horse serum albumin into the blood of infants presenting what Rietschel calls "dynamic protein fever" after overfeeding with these substances. Goebel explains the fever as merely a disturbance from lack of adequate proportion of water in the food. The fever is thus a "relative thirst" fever.

Bismuth in Treatment of Congenital Syphilis.—Frank was not impressed by any superior advantages of bismuth in treatment of young syphilitic infants. On the contrary, 25 per cent. of the twelve infants whose cases are reported developed kidney disturbances. One died, and the expected necrosis of the convoluted tubuli was evident.

Eyelid Reflexes.—Galant presents evidence that certain phenomena which we have been accepting as reflexes are in fact merely autonomous contraction of muscles. Death arrests all reflex action, but the mechanical excitability of the muscles may persist for a few hours after death. If mechanical stimulation of the muscle elicits the phenomenon postmortem, then its reflex nature is excluded. This has been established for a number of supposed reflexes, but the McCarthy supra-orbital reflex has never been elicited on the cadaver. The lid reflexes are particularly useful in detection of simulation, and as pathognomonic testimony in neurologic, pediatric and psychiatric examination, while study of them throws light on reflexes in general.

The Blood in the Prognosis of Tuberculosis in Children.—Gulden and Lüders compared the blood count with the speed of sedimentation of the erythrocytes in 150 children with peripheral or pulmonary tuberculosis. The findings were remarkably constant in the individual child, and throw light on the prognosis, indicating when treatment has no prospects of success or when operative measures are required. "We seldom can obtain such instructive findings with other methods as are afforded by repeated acceleration of sedimentation with gradual lymphopenia, gradual disappearance of eosinophils and slow increase in the numbers of neutrophils while the clinical findings are still perfectly satisfactory; or, on the other hand, repeated normal speed of sedimentation with approximately normal blood picture even with clinical and roentgenographic findings which are far from satisfactory."

Fate of Syphilitic Children Given Thorough Treatment.—Meyer reviews the experiences with 311 syphilitic children at an orphan asylum between 1909 and 1923. In 123 of the 127 kept under close observation, the Wassermann test has been negative for from one to thirteen years since the last treatment. Most of the children have developed into useful members of society. The manifestations of the syphilis were harder to influence, the older the child when systematic treatment was begun.

Prognosis of Tuberculosis in Infants.—Hahlo states that about 11 per cent. of infant cadavers show signs of tuberculosis, according to the records of seven German clinics. At the Halle children's clinic, 75 per cent. of the forty infants with tuberculosis died, including all with manifest internal lesions in the first six months of life.

Archiv für klinische Chirurgie, Berlin

129: 1-434 (April 7) 1924

*The Liver in Gallstone Cases. A. Tietze and K. Winkler.—p. 1.
Not Malacia But Necrosis of Semilunar Bone. G. Axhausen.—p. 26.
*Sympathetic Disease of Bones. B. Martin.—p. 45.
*Operative Treatment of Exophthalmic Goiter. F. Liebig.—p. 58.
*Elasticity of Large Arteries. G. Tschmarke.—p. 83.
*Simple Means to Ward Off Atrophy of Muscle. F. Mandl.—p. 98.
Aberrant Pancreas Cells in Stomach. F. Delhougne.—p. 116.
Operation for Hallux Vagus. E. Herzberg.—p. 124.
*Chronic Gastritis. G. E. Konjetzny.—p. 139.
*Wrapping Nerve in Omentum. B. E. Linberg.—p. 172.
Anatomy of Mesenteric Artery. Ssoson-Jaroschewitsch.—p. 178.
*Roentgen-Ray Treatment of Mammary Cancer. A. Beck.—p. 194.
Experimental Research on Regeneration of Bone. Willich.—p. 203.
Trauma of Anterior Spinal Roots. W. Lehmann.—p. 252.
Resection of Perforated Ulcer. Bundschuh.—p. 281.
Deformities with Flatfoot. Dropmann.—p. 297.
Paranephritis and Carbuncle of the Kidney. K. Reschke.—p. 303.
Puncture of Corpus Callosum. Ssoson-Jaroschewitsch.—p. 328.
Necrosis of Epiphysis and Arthritis Deformans. G. Axhausen.—p. 341.
Ganglioneuroma of Posterior Mediastinum. A. Brunner.—p. 364.
Healing of Injured Tendons. A. Salomon.—p. 397.
Papillomas in Kidney Pelvis. K. Reschke.—p. 431.
"Mishaps at Gallstone Operations." E. Liek.—p. 434.

Participation of the Liver in Gallstone Disturbances.—Tietze and Winkler found pathologic conditions constantly in a scrap cut from the liver during fifty operations for gallstones. The changes in the liver were so severe that it must be realized that gallstones and the resulting infection are not cured by the operation on the biliary passages alone but require a course of treatment to act on the liver as well.

Sympathetic Bone Disease.—Martin discusses the reasons for and the mechanism of the sympathetic association of the fibula in the case of disease of the tibia, or radius-ulna, when there is no direct involvement of the second bone.

Operative Treatment of Exophthalmic Goiter.—Liebig states that 69 per cent. can be regarded as cured, and only 7 per cent. as not benefited of the 135 patients that have been reexamined recently of the 238 patients surviving operations for exophthalmic goiter in the last thirty years. The longer the interval since the operation, the larger the proportion of cures. The earning capacity has been more or less completely restored in 95 per cent. The exophthalmos persisted more or less in 8 per cent. There was only one instance of postoperative tetany, and this has persisted but is kept latent by systematic internal parathyroid treatment, with calcium. Thirty died soon after the operation of the total 268 given operative treatment.

Research on the Elasticity of the Arteries.—Tschmarke studied in particular the relations between the lengthwise stretching of the arteries and the volume of blood per second.

Prophylaxis of Atrophy of Muscle.—Mandl regards the involuntary contraction of the muscles in the region of an injury as an important factor in impairing the circulation and entailing atrophy. All of this can be avoided by preventing the contraction, and this can be easily accomplished by injection into the region of 20 or 30 c.c. of a 0.5 per cent. solution of procain. He repeats the injection on the three following days; no epinephrin is used. His experience with seventy cases has confirmed the efficacy of this treatment, but it would be more effectual if some means could be discovered to lengthen the action of the anesthetic. The visible effect does not last more than six or eight hours, but the abolition of the tendency to dislocation is a great gain, materially shortening the treatment for fractures.

Chronic Gastritis.—Konjetzny reports eight cases of Billroth I resection of the stomach which put an end at once and apparently permanently to gastric disturbances of several years' standing. The expected ulcer in stomach or duodenum was conspicuous by its absence, the chronic gastritis or duodenitis explaining alone the clinical picture. It is almost invariably confined to the vicinity of the pylorus. Removal of the pyloric gastritis area allows recuperation of the balance of the stomach, and the cure is soon complete. In two of his cases the microscope revealed incipient cancer near the pylorus. In a ninth case, a woman of 44 had been having gastric disturbances for a year when suddenly there was profuse hemorrhage from the stomach. No ulcer could be discovered at the prompt laparotomy, and the abdomen was sutured without further intervention. Necropsy three days later confirmed the multiple capillary bleeding from the chronically inflamed mucosa in the pylorus region. The patient might have been saved if the stomach had been resected at first, instead of the surgeon's allowing himself to be bluffed out of the contemplated intervention by the absence of an ulcer.

Omentum Wrapping for Nerve.—Linberg expatiates on the advantages of using an autograft of omentum for this purpose. In the case described, the external popliteal was wrapped in a double strip of omentum for a stretch of 6 cm. after the nerve had been released from cicatricial tissue. The perfect outcome was confirmed by experiments on dogs.

Roentgen-Ray Treatment of Inoperable Mammary Cancer.—Beck reports that four are still living and in good health

of the fifteen patients with absolutely inoperable mammary cancer treated by radiotherapy in the last five years. These surviving patients were the older ones in the group, and the cancer had been of slower development. Of the other eleven patients, only two showed improvement and it was slight and brief. According to his experience, the best results are obtained with 65 or 75 per cent. of the skin dose, at four or six weeks' intervals, repeated six or eight times. In several of his cases an intense erythema developed after the second or third series, compelling the abandoning of the roentgen-ray treatment.

Deutsche medizinische Wochenschrift, Leipzig

50: 391-422 (March 28) 1924

Economy in Medical Treatment. F. Kraus.—p. 391.
*Irradiation of Cancer in Surgery. Kurtzahn.—p. 394.
*Irradiation of Cancer in Gynecology. H. Naujoks.—p. 396.
*Irradiation of Cancer in Internal Medicine. Klewitz.—p. 399.
*Irradiation of Cancer in Ophthalmology. Birch-Hirschfeld.—p. 401.
Simplified Meinicke Test. R. Untersteiner.—p. 405.
Quantitative Serodiagnosis of Syphilis. F. F. Werner.—p. 405.
Technic of Dressing Wounds. Feszler.—p. 406.
*Bath Treatment in Aortic Insufficiency. R. Lurz.—p. 408.
New Arc Lamps for Medical Use. H. Moldenschardt.—p. 410.
Vital Statistics in the Netherlands. E. Roesle.—p. 411.
Strontium Bromid in Roentgenology. E. Merck.—p. 411.
Development of Pathology. T. Meyer-Steineg.—p. 412. Begun p. 311.

Symposium on Roentgen and Radium Treatment of Malignant Tumors.—Various specialists in Königsberg discuss the results they have obtained. They are unanimous in the recommendation to operate in every case in which it is possible. The irradiation is only an adjuvant.

Bath Treatment in Aortic Insufficiency.—Lurz found that patients with aortic insufficiency prefer cooler baths (around 30 C.). The action of the temperature of the bath is as important with aortic insufficiency as the action from the pressure on patients with mitral stenosis.

50: 423-454 (April 4) 1924

Examination of Protozoa According to Koch. F. K. Kleine.—p. 423.
Treatment of Spinal Tuberculosis. A. Brüning.—p. 426.
Tuberculosis and Pregnancy. A. Sternberg.—p. 428.
Thermic Stimulation for the Labyrinth Test. F. Kobrak.—p. 430.
Experiences with Autogenous Vaccines. Tietz.—p. 432.
Residual Nitrogen and Sodium Chlorid in the Serum After Deproteinization Through Membrane Filters. H. Lucke.—p. 432.
Artificial Fecundation in Bilateral Epididymitis. H. Rohleder.—p. 433.
Dystrophia Adiposogenitalis. H. Schack.—p. 434.
*Ether-Oil Anesthesia. Dolshansky.—p. 435.
Meinicke's Turbidity Reaction. M. Richter.—p. 436.
Symptomatology of Myeloid Leukemia. R. Deussing.—p. 437.
*Treatment of Pulmonary Edema. M. John.—p. 438.
Injections of Own Blood. Steiner.—p. 438.
Spasmophilia. E. Stettner.—p. 439.
Typhoid Carriers. Schubert.—p. 441.
Tuberculosis Dispensaries in Berlin. L. Dünner.—p. 442.

Ether-Oil Anesthesia.—Dolshansky recalls that in surgical operations in the region of the mouth or those requiring the ventral recumbent position (laminectomy), inhalation anesthesia is often difficult. In these circumstances it is advisable to substitute an ether-oil solution administered through the rectum. Tuberculous peritonitis, rectal operations and interventions performed in the Trendelenburg position are contraindications. He has applied it to 150 cases and reports that it failed in only two instances. There was no hemorrhage from the bowel afterward in any case.

Treatment of Pulmonary Edema.—John sums up his experience with intravenous calcium chlorid injections. In twenty-two cases of pulmonary edema he observed prompt cessation of the rattling râles, sometimes after a single injection. The mechanism is probably the reduction of the permeability of the capillary walls in the lungs. However, Zimmer has reported that untoward symptoms developed in one of his cases (cyanosis, failing pulse and transient arrest of the respiration), but John has had no by-effects in his nearly 5,000 injections of calcium chlorid.

Klinische Wochenschrift, Berlin

3: 513-560 (March 25) 1924

*Deforming Osteochondritis of Hip Joint. Perthes.—p. 513.
*New Views on Cretinism. Finkbeiner.—p. 517.
Bronchial Asthma and Climate. W. S. van Leeuwen et al.—p. 520.
Experimental Rickets. A. Buschke and B. Peiser.—p. 523.
Paravertebral Neurectomy and Injections. W. v. Gaza.—p. 525.
Duodenal Diagnosis of Pancreatic Affections. K. Isaac-Krieger.—p. 528.
*Syphilis of Central Nervous System and of Aorta. K. Löwenberg.—p. 531.
Relation of Chronic Periodic Urticaria to the Calcium Content of Serum in Dysfunction of Ovaries. J. Callenberg.—p. 533.
Rôle of Liver in Water Metabolism. H. Pollitzer.—p. 534.
*Endothelia of Capillaries as Migrating Cells. F. Herzog.—p. 535.
A Peculiar Type of Lethargy and Its Cure by a Lumbar Puncture. W. Pockels.—p. 535.
Indications for Abdominal Cesarean Section. H. Martius.—p. 536.
Antituberculosis Legislation. Dietrich.—p. 543.
Hyoscin as Symptomatic Remedy in Catatonic Stupor. W. Waltz.—p. 558.

Deforming Osteochondritis of Hip Joint.—Perthes gives a survey on the present state of knowledge of the disease which he was one of the first to describe. It affects children, especially boys, between 5 and 12 years of age. The child begins to limp, usually after a slight trauma. Pains are not frequent. The movements are free except abduction and sometimes rotation. In general anesthesia, abduction is possible because it is due to a contracture of the adductor muscles. The greater trochanter is about 1 to 2 cm. higher on the affected side. It seems that internal factors cause a change in the cartilage, and the accidental lesion of a blood vessel leads to necrosis. He recommends massage, air and sun. Dressings should be applied only if the joint hurts.

New Views on Cretinism.—Finkbeiner considers cretinism as a sign of degeneration. The iodin prevention of goiters, which are only indicators of this degeneration, will not diminish the cretinism. The affection of the thyroid gland does not completely explain the condition. A mixture of races gives more variants, both plus and minus. It is different whether the mixture continues with a steady inflow of new elements, or whether it stagnates. The first case produces a luxuriant development in every respect, the latter a stagnation with relapse to the primitive forms. He found in the bones of cretins resemblances to the bones of polar peoples, and believes that neotenia has to be taken into consideration.

Syphilis of Central Nervous System and of Aorta.—Löwenberg considers the simultaneous occurrence of syphilis of the central nervous system and of the blood vessels as almost the rule.

Endothelia of Capillaries as Migrating Cells.—Herzog observed phagocytosis of india ink by the endothelium of the capillaries of a frog. He found these cells later in the tissues.

Medizinische Klinik, Berlin

20: 403-438 (March 30) 1924

Abuse of Morphin and Cocain. E. Meyer.—p. 403.
*Research on the Gallbladder. B. Halpert.—p. 408.
Malaria Treatment of General Paralysis. H. Reese and K. Peter.—p. 410. Conc'n.
Stenosis of the Aorta. H. Gerhartz.—p. 412.
Intestinal Type of Lymphogranulomatosis. L. Sussig.—p. 415.
Stimulation Treatment in Trichophytosis. E. Keining.—p. 416.
Lytic Action of Bacillus Mycoides Much. P. Kimmelstiel.—p. 419.
Carrel's Leukocyte Trephones. K. Brandenburg.—p. 421.
Recent Works on Pathology of Digestive Organs. W. Wolff.—p. 424.

Research on the Gallbladder.—Halpert believes that the gallbladder is an organ exclusively for resorption of the bile secreted between the meals. Stagnation of bile in the gallbladder can occur only when there is disproportion between the formation of bile and the ability of the bladder to resorb it.

20: 439-474 (April 6) 1924

Treatment of Typhoid Carriers. K. Sick.—p. 439.
Allergy and Clinical Picture of Smallpox. v. Einsiedel.—p. 441.
Malaria Treatment of General Paralysis. G. Herrmann.—p. 445.
*Tympany of Skull in Deforming Osteitis. A. Vogl.—p. 448.
*Treatment of Dysentery. W. Tinnemeyer.—p. 450.
Action of Phlorizin, Especially in Pregnancy. Kamnitzer and Joseph.—p. 453.
*Hemolysins in Pathogenesis of General Paralysis. V. Kafka.—p. 456.
Practical Gynecology. E. Runge.—p. 459. Cont'n.
*Recent Literature on Flatfoot. S. Peltesohn.—p. 461.
Law on Venereal Diseases. F. Pinkus.—p. 472.

Tympany of Skull in Deforming Osteitis.—Vogl observed a tympanic sound, like that of an earthen jar, on percussion of the skull of his patient. The circumference of the head was 5.5 cm. larger than a few years before. Impairment of hearing and of backward movements of the head, loss of teeth, and roentgenologic changes of other bones were found in the patient, a man, aged 56.

Treatment of Dysentery.—Tinnemeyer begins every treatment of acute bacillary dysentery with from 1 to 3 tablespoonfuls of castor oil. Opium is necessary when the tenesmus and spastic intestinal symptoms are pronounced. Animal charcoal and kaolin did no harm, but he is not sure as to any benefit from them. Univalent serums had a favorable action; polyvalent had none. It is useless to treat ulcers in chronic dysentery with the rectosigmoidoscope because it reaches only the smallest part of the affected bowel. An artificial anus brings rest to the colon. He saw excellent results in four patients.

Hemolysins in Pathogenesis of General Paralysis.—Kafka finds that the presence of hemolysin in the cerebrospinal fluid is chiefly an indicator for the permeability of the meninges. Parallel titrations of the hemolysins must be made in the serum before concluding as to improvement. Fluorescein sodium is another good indicator of permeability.

Recent Literature on Flatfoot.—Peltesohn gives a survey on new investigations on pes planus and similar conditions. He considers the improper shape of the shoes and the improper way of walking as important causes of deformities. The child and the savage walk with slightly supinated feet. It is unbelievable that absolutely wrong positions (outward rotation) are taught by the dancing and gymnastic teachers.

Münchener medizinische Wochenschrift, Munich

71: 389-422 (March 28) 1924

Economy in Treatment. F. Müller.—p. 389.
*Treatment of Infectious Diseases. L. Saathoff.—p. 392.
*Food of Cows. A. Eckstein and E. Rominger.—p. 396.
*Protein Therapy. F. Roemer.—p. 398.
Lead Poisoning in Type Foundries. Thiele.—p. 399.
External Examination in Obstetrics. R. Demme.—p. 400.
Dermoid Cyst in Round Ligament. R. Hornung.—p. 402.
Foreign Body in Esophagus. E. Niesert.—p. 402.
Ascarids in Liver and Pancreas. R. Engel.—p. 403.
"Twins and Heredity Research." Leven.—p. 404.
"Treatment of Phimosis." F. Hamburger.—p. 404.
Treatment of Pernicious Anemia. E. Kulcke.—p. 405.
Neurasthenia. H. Curschmann.—p. 407.
International Health Campaign. W. Rimpau.—p. 409.
Recent Progress in Balneology. H. Weskott.—p. 412.

Treatment of Infectious Diseases.—Saathoff injected emulsions of living colon bacilli and other gram-negative germs in chronic infections, especially pyelitis. There were no by-effects, and the therapeutic results were better than with injections of dead bacilli.

Food of Cows and Vitamins in Their Milk.—Eckstein and Rominger examined milk from cows which were fed on green fodder that had been preserved by passing an electric current through it (Schweizer's method). The vitamin content of the milk was sufficient.

History of Protein Therapy.—Roemer considers Buchner as the inventor of parenteral protein therapy (1890).

Wiener klinische Wochenschrift, Vienna

37: 329-354 (April 3) 1924

*Goiter of Adolescents. E. Gold and V. Orator.—p. 329.
*Ventricular Fibrillation in Man. F. Donath and E. Kauf.—p. 331.
*Myxedema in Children. E. Nobel.—p. 333.
A Preparation of Luetin. B. Busson.—p. 333.
Seborrhea of Face After Encephalitis. G. Stiefler.—p. 334.
Disinfection of Tissues. R. Schnitzer and F. Munter.—p. 335.
*Early Diagnosis of Renal Tuberculosis. T. Hryntschak.—p. 336.
*Duodenal Tube in Treatment of Tenia. H. Schneider.—p. 338.
*Ski Injury of Knee Joint. O. Stracker.—p. 339.
Aplasia of Mammary Gland. R. Stiglbauer.—p. 340.
Congenital Syphilis. G. Nobl and F. Remenovsky.—p. 341. Conc'n.
Water Metabolism, Diuresis and Diuretics. E. P. Pick. Supplement.—pp. 1-16.

Goiter of Adolescents.—Gold and Orator examined histologically 555 goiters. They found a prevalence of the parenchymatous type up to the seventeenth year. Later, a colloid goiter is the rule, and atrophy of the colloid goiter was found in old persons. There was, however, colloid present in the goiters of several adolescents who had been treated with iodin. This may account for the conflicting findings of other authors. An insufficient compensatory hyperplasia seems to be the basis of the condition. Iodin treatment is rational, but treatment with desiccated thyroid tissue should not be forgotten.

Ventricular Fibrillation in Man.—Donath and Kauf reproduce electrocardiograms from a patient suffering from attacks which resembled the Adams-Stokes' syndrome. Yet there was a high frequency of the cardiac impulses during the attacks, with extrasystoles up to 220 per minute, which the authors explain as brief attacks of ventricular fibrillation. The attacks disappeared after thorough emptying of the bowels.

Myxedema in Children.—Nobel points to the unsatisfactory results in treatment of myxedema in children. Some of the failures may be due to inefficient preparations of the thyroid gland or to too small doses of it.

Early Diagnosis of Renal Tuberculosis.—Hryntschak recommends Löwenstein's culture technic for diagnosis of tuberculosis of the kidneys. The guinea-pig experiment is very frequently negative. The urine does not have to be taken under aseptic precautions for the culture. The Löwenstein technic was described recently in these columns, p. 1308.

Duodenal Tube in Treatment of Tenia.—Schneider prescribes a cathartic in the evening. The next morning he introduces the duodenal tube on a fasting stomach and injects one half of an infusion of senna (5 gm. in 50 gm. of water). After a quarter of an hour he injects the other half mixed with 2 gm. of extract of male fern and 4 gm. of extract of pomegranate bark. The tapeworm was expelled whole within two hours in thirteen of the seventeen thus treated. The failures were due to rolling up of the duodenal tube or to inadequate dosage.

Ski Injury of Knee Joint.—Stracker discusses the movements of the legs in ski-runners. Rotation is the most frequent cause of injuries of the menisci of the knee joint. The short fibers of the medial portion of the quadriceps muscle protect the joint against outward rotation. The muscle is easily fatigued in beginners. It should not be overstrained, but slowly trained.

Zeitschrift für urologische Chirurgie, Berlin

15: 131-226 (March 31) 1924

*Retroperitoneal Mixed Tumor. N. Antelawa.—p. 131.
*Tuberculosis of the Male Genitals. A. Wallner.—p. 137.
Anatomy of the Penis and Its Age Changes. E. Brack.—p. 163.
Double Pelvis and Ureter in Each Kidney. S. Perlmann.—p. 188.
Operative Indications in Cystic Kidney. H. Harttung.—p. 200.

Retroperitoneal Mixed Tumor.—Antelawa describes a rare case of a 2 year old child with a "fibrolipomyochondroosteocystoma." It was extirpated together with the kidney from the capsule of which it grew. The stain test justified the nephrectomy, but the child died.

Tuberculosis of the Male Genitals.—Wallner concludes from his observations made on forty patients that the treatment of genital tuberculosis in men can be only surgical. Epididymectomy and semicastration do not compete with each other but each has its special indications after localization of the main focus. For the sake of prevention, it is advisable to sever the contralateral vas deferens to forestall transmission from the internal genitals to the other side. In old men, total castration is indicated. Surgical treatment of the genitals is contraindicated in cases complicated with florid tuberculosis of the lungs, kidneys, intestines or bones. Here only palliative heliotherapy and roentgen-ray treatment are indicated.

Zentralblatt für Gynäkologie, Leipzig

48: 693-720 (March 29) 1924

Plastic Operations on the Female Urethra. E. Bumm.—p. 694.
Treatment of Incarcerated Pregnant Uterus. H. Mertens.—p. 696.
Paradoxic Ischuria in the Puerperium. W. J. Zempléni.—p. 698.
*Foreign Bodies in the Bladder. K. v. Lehoczky-Semmelweis.—p. 701.
Stalagmometric Urinalysis. E. Meyer.—p. 703.
Danger of Uremia with Inoperable Uterine Cancer. W. Holz.—p. 705.
Hexamethylenamin in Cystitis. C. Pasch.—p. 706.

Foreign Bodies in Female Bladder.—Lehoczky-Semmelweis reports two cases in one of which a hair-pin could be extracted from the bladder only by means of abdominal section. In the other he was able to extract by the natural route a pin on which a calculus weighing 35 gm. had developed. However, this caused incontinence which had to be treated separately.

48: 721-784 (April 5) 1924

Aberrant Epithelium in Ovary and Peritoneum. R. Meyer.—p. 722.
Early Phases of Uterine Cancer. O. Frankl.—p. 725.
*Diathermy for Exploratory Excision. R. Donald.—p. 727.
*Minor Gynecologic Operations. S. Polgár.—p. 728.
*Clamping the Parametrium to Prevent Hemorrhage. F. Burgkhardt.—p. 734.
Conservative Treatment of Gonorrheal Adnexitis. W. Duwe.—p. 737.

Diathermy Apparatus for Excision of Tissue Particles.—In order to avoid spreading cancer by opening blood vessels in cutting out a scrap for examination, Donald recommends the use of the diathermy apparatus for the excision. This can be applied even to cancer of the uterine cervix.

Local Anesthesia in Gynecology.—Polgár explains that in order to produce complete anesthesia it is not sufficient to infiltrate the pudendal nerve, but the anesthetic must be applied likewise to the inferior hemorrhoidal, the posterior labial, perineal, posterior cutaneous femoral, anococcygeal and the dorsal nerve of the clitoris.

Clamping the Parametrium.—Burgkhardt reports a case in which he successfully arrested menacing hemorrhage from intractable inertia of the uterus by applying the Muzeux four-clamp forceps in the parametrium. The uterine arteries were compressed by the clamp. However, caution must be observed not to injure the ureters or the bladder.

Zentralblatt für innere Medizin, Leipzig

45: 241-272 (April 5) 1924

*Urea Diuresis. E. Becher.—p. 242. Conc'n, p. 273.
*Appendicitis with Situs Inversus. C. B. Hörnicke.—p. 250.

Urea Diuresis.—Becher believes that urea acts on the kidneys and also on the tissues. Subcutaneously injected, sodium chlorid is eliminated much more rapidly when an injection of urea is given. He suggests that urea may increase the metabolism of the cells, and act on the tissues in a similar way to that assumed for thyroid extract.

Appendicitis with Situs Inversus.—Hörnicke points out that a slight inflammation of the appendix in situs inversus or abnormal positions of the appendix causes pains in McBurney's point. Only when the parietal peritoneum is affected, is the pain localized correctly.

Casopis lekaruv ceskych, Prague

63: 545-580 (April 5) 1924

Tuberculosis and the Liver. O. Horák.—p. 545.
*Radium Treatment of Pernicious Anemia. F. Tománek.—p. 549.
Poriomania in Bratz' Epilepsy. M. Springlová.—p. 552.
Medicolegal Case of Homosexuality. T. Hegner.—p. 554.
*Autosynnoia. Heveroch.—p. 556. Conc'n.
Chemotherapy of Rhinoscleroma. V. Jindra.—p. 558.
*Cultivation of Tubercle Bacilli. J. Cancik and N. Mazepová.—p. 562.
Nutrition of the Tuberculous. Eiselt.—p. 564.

Radium Treatment of Pernicious Anemia.—Tománek had a fairly good impression of the results of radium treatment of his six patients with pernicious anemia. He irradiated the spleen, and considers the method as decidedly preferable to splenectomy.

Autosynnoia.—Heveroch uses the term "autosynnoia" to designate a state of introversion in which the subject is so concentrated in his thoughts or hallucinations that he loses all interest in the outside world. He quotes the histories of several patients with schizophrenia, paranoia and other affections. The active introversion of the mystics produces a similar condition.

Cultivation of Tubercle Bacilli.—Cancik and Mazepová compared various culture mediums for cultivation of tubercle bacilli from the sputum. To avoid the dissolution of some of them they prepared egg mediums with addition of agar. Lecithin could be substituted for the egg.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1489-1620 (April 5) 1924

*The Medical Education Question. G. van Rijnberk.—p. 1490.
*Progressive Myoclonus Epilepsy. J. Lobstein.—p. 1492.
Homosexuality. H. C. Valkema Blouw.—p. 1501.
Pulmonary Tuberculosis in Mountain Resorts. Godthelp.—p. 1510.
Melancholia in Antiquity. H. J. Lulofs.—p. 1521.
The Historical "Sympathy Powder." A. J. van der Weyde.—p. 1534.
A Netherlands Physician in China. J. W. Schotman.—p. 1564. Cont'd.

The Medical Education Question.—Van Rijnberk sums up his views in the statement that the modern passion for efficiency—the endeavor to obtain the greatest practical results with the least time and effort—is the gravest danger that medical education has ever been confronted with. He expresses the hope that medical education in the Netherlands may be preserved from "Anglo-American efficiency." He asks the reader to ask himself what part of his medical training he has derived most pleasure from, the part he could use at once in his practice or the part that he never had a direct use for. He is confident that the majority will state that they got more pleasure and inspiration out of the things that "efficiency" would brand as useless and superfluous. Every one has to have some hobby, some avocation, to interest himself in, and when this falls within the confines of his profession, this is much better than when he has to step entirely out of this field for it. The broader the base for medical practice the better. With a small base, the structure becomes topheavy as science and experience broaden.

Myoclonus Epilepsy.—The chronic myoclonus epilepsy developed in the girl of 13 and ran its rapidly progressive course in seven years. The parents were Jewish and related. The disease was in three phases, as described by Lundborg.

Hygiea, Stockholm

86: 145-176 (March 15) 1924

*Prophylaxis of Congenital Syphilis. J. Almkvist.—p. 145. Begun, p. 113.
*Latent Period of General Paralysis. F. Wiesel.—p. 164.

86: 177-224 (March 31) 1924

Etiology of Erythema Nodosum. G. Lindberg.—p. 177.
Classification of Mental Diseases. S. Hedenberg.—p. 195.

Prophylaxis of Congenital Syphilis.—Almkvist protests against the custom of giving the newly born infants of syphilitic women systematic treatment for syphilis without waiting to see whether they have syphilis or not. One consequence of this has been that we do not know when and how the Wassermann reaction appears in untreated infants. Our treatment distorts conditions in this respect, and he contends that the same rule applies to infants as to adults, namely, that those suspected of syphilis should be kept under supervision and be tested repeatedly for the Wassermann reaction, but treatment should not be begun until the diagnosis is certain. He gives the details of sixty-seven cases, his experience confirming that of others in various countries, all testifying that by systematic treatment of the gravid woman from the middle of the pregnancy, or better yet, from the very beginning of the pregnancy, we can protect the fetus against the infection. The treatment of the prospective mother has to be kept up till delivery, and he is strongly in favor of his method of continuous treatment, alternating arsphenamin and mercury, changing from one to the other or to bismuth, but without any intermissions in the course. When the infant is born, he keeps it under close observation, but does not begin treatment unless the child shows signs of the disease. It may prove that six months or less may be enough to determine this, but to date as our knowledge of untreated congenital syphilis is so meager, he advises to keep up the supervision for several years. He declares that every pregnant woman should be tested serologically and clinically for syphilis by the first physician who examines her. Treatment of the mother before the pregnancy is not so effectual in prophylaxis of congenital syphilis as treatment during the pregnancy. In his series, 96 per cent. of the children of the thirty-seven untreated mothers had congenital syphilis but only 10 per cent. of the thirty-nine given systematic treatment after the pregnancy was under way.

The Latent Period in Progressive Paralysis.—Wiesel states that in 188 cases from the records of Stockholm institutions, the shortest interval between the syphilitic infection and the development of the progressive paralysis was two years, the longest, thirty-six and thirty-nine years. The average was nearly seventeen years in the 163 men and more than fourteen years in the twenty-five women. He was unable to discover any connection between the length of the intervening period and the manifestations of the disease or extraneous factors, even abuse of alcohol, or intensity of mercurial treatment.